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THE
McGEE MEMORIAL MEETING
OF THE
WASHINGTON ACADEMY OF SCIENCES
HELD AT
THE CARNEGIE INSTITUTION
WASHINGTON, D. C.

DECEMBER 5, 1913

BALTIMORE
WILLIAMS & WILKINS COMPANY
1916

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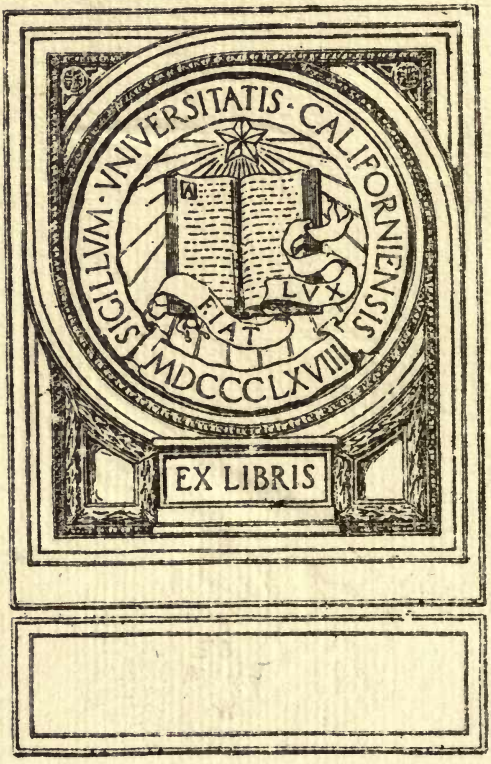
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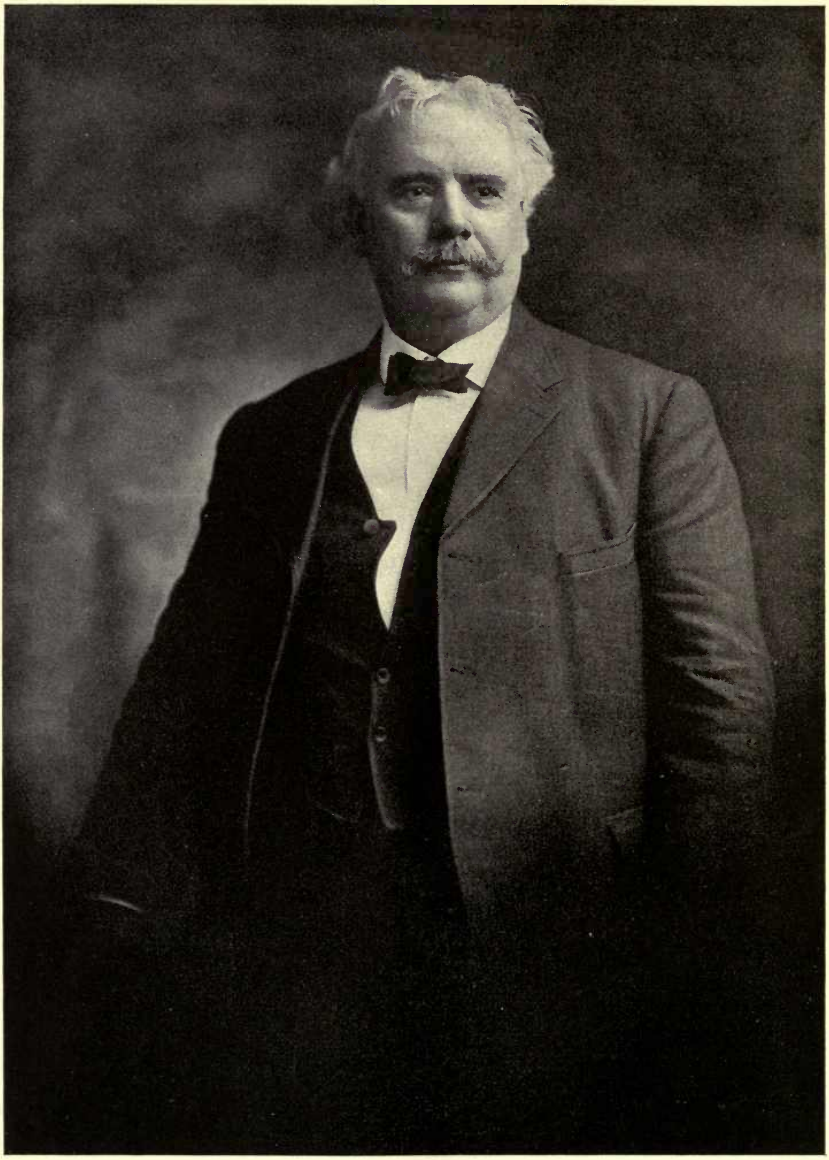

W J McGEE
APRIL 17, 1853 — SEPTEMBER 4, 1912

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ACTION OF THE BOARD OF MANAGERS

OF THE

WASHINGTON ACADEMY OF SCIENCES

AUTHORIZING

THE McGEE MEMORIAL MEETING

180th Meeting. January 11, 1913: "Mr. Pinchot presented by invitation a plan for a memorial meeting in commemoration of the life and service to science of Doctor W J McGee,[1] recently deceased. It was proposed to arrange for a selected list of papers covering the wide range of Doctor McGee's activities, and that the affiliated organizations of which he was a member be invited to participate. After considerable discussion, all of which was favorable to the plan, Doctor Kober moved that a special committee, of which Mr. Pinchot should be chairman and President Coville a member, be appointed by the President to have charge of this meeting.—Carried."

The following Committee was appointed January 20, 1913:

Frederick V. Coville, Henry Gannett, G. K. Gilbert, F. W. Hodge, J. A. Holmes, F. H. Newell, Gifford Pinchot, Chairman, Milton Whitney.

[1] Dr. McGee preferred to write his name without periods.

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UNIV. OF CALIFORNIA

THE McGEE MEMORIAL MEETING
OF THE
WASHINGTON ACADEMY OF SCIENCES

In opening the meeting Doctor Coville said:

When death comes to a man who has rendered distinguished service to humanity, it commonly finds him occupying some high office and surrounded by the members of his family. But the end of Doctor McGee, according to the will of fate, came otherwise. It is peculiarly incumbent upon us, therefore, his friends and colleagues, to meet together for the purpose of paying honor to his memory. It is true that individually we shall honor him as long as each of us shall live. But we meet together at this time in order to give testimony publicly to the high esteem in which we hold him. The Carnegie Institution, through its President, Doctor Woodward, has granted to the Washington Academy of Sciences the use of this building for this purpose. Doctor Woodward is out of the city. I regret greatly that he could not have been here to himself open the meeting, and to permit us to thank him personally.

Doctor McGee was a member of numerous associations, many of which are represented here tonight by members who have been selected for the purpose. Many associations have passed resolutions in commemoration of Doctor McGee. In addition to the resolutions, many letters from individuals expressing appreciation of Doctor McGee have reached the Committee.

The resolutions and letters which have been received can not be read tonight, but will find place in the commemorative volume which will be printed later. There is, however, one letter which was received from one closely and intimately related to Doctor McGee. This letter contains so much of human interest that the Committee has decided it should be read to you tonight. The letter came with a statement that it might be edited to suit the desires of the Committee, but it is a document of such intimate personal relationship

that the Committee has decided to have it read without any emendation whatever. The letter is from Miss Emma R. McGee, of Iowa, a sister of Doctor McGee.[1]

Doctor McGee's constructive intellectual activity was exercised in varied fields of science. From a farm boy Doctor McGee became a blacksmith; from a good blacksmith he became a good geologist. His work on the Atlantic Coastal Plain is one of the monumental works in geology; from that he went into anthropology and ethnology. Then he made an almost new science, for he went into the subject of Conservation, and brought all the energies and knowledge of a lifetime into that work.

I am reminded at this time of a statement made by a Russian botanist nearly a century ago when he had finished a very remarkable and very good piece of critical work:

> Errare quidem humanum est, sed discrimen statuimus inter errores qui excusari possunt, et qui non possunt. Solatio mihi est spes, vos, benevolos lectores, errores meos in iis numeraturos esse, qui excusari possint.

It is the business of the scientist to pursue the truth. We should so live that when we have finished our course, we can say, as Doctor McGee would have said: "To make mistakes is human, it is true, but there is a difference between errors which are excusable and those which are not excusable. It comforts me, my colleagues, to have the hope that you will place my mistakes among those you gladly forgive."

In my own department of research, the vegetable world, Doctor McGee's work was of limited extent. Yet I always found his advice helpful, constructive, and suggestive. Even in this unfamiliar field, he was an intellectual editor whose criticism, which was often sought and always freely given, was of the highest value.

It was in geology, geography, and anthropology that he did his chief work. He made lasting contributions to these sciences. In his later years he devoted his efforts to the creation of a sound public conception of our natural resources, and to their development and use to the point of greatest efficiency. Doctor McGee's relation to these subjects is more fully known to his immediate associates in the

[1] See page 90.

various lines of activity with which he was identified. We shall listen with pleasure to their discussion of his life and work.

The first speaker will be Doctor Milton Whitney, Chief of the Bureau of Soils, who was associated with Doctor McGee in his later studies of the uses of water in agriculture.

Doctor Whitney said:

For the last five and a half years of his extremely active life, Doctor McGee was intimately associated with me in the Bureau of Soils and was one of my principal and most valued advisors. In this intimate and quiet association in executive work, where practical things have to be done and theories and speculations have to be translated into definite, constructive, and reasonable action, he presented a side of his character which perhaps some of his associates in the field of constructive legislation did not see. It is of this I speak tonight.

Like all great reformers, he knew that to secure attention and reform in methods the people must be shocked to overcome natural inertia and arouse them to action.

His quotation of huge figures indicating that an area equivalent to 100,000 farms has been devastated in this country by soil erosion was a clarion call to attract attention to the need of proper conservation of the soil in cultivating the fields and managing the forests and other protective covers. He did not mean that all erosion is harmful and necessarily destructive—he was too eminent a geologist and physiographer to fail to see even more clearly than most of us, that erosion and leaching are natural processes in the life of the globe, just as evaporation and elimination of what we call waste material is a life process of the living body. Without these there would be an absence of surface relief and of physiographic form; there would be an absence of most of the mineral segregation that marks our mineral wealth; there would be an absence of those rejuvenated and most fertile soils of our younger flood plains, and of the renewal of our surface soils generally. His conception was that erosion is a necessary natural process; his purpose was not to prevent erosion, but to control it in the interest of mankind.

He no more considered erosion as a necessary evil than he would have condemned the rainfall because of occasional disastrous floods,

or the movements of the air which bring fresh supplies of oxygen to the body because of occasional destructive storms. But he did mean to convey the idea that each farmer and each land owner has a duty to himself, to posterity, and to the country to protect our lands and our fields and waterways from destructive erosion, as it is the duty of builders to take all reasonable precautions in the construction of dams and buildings and ships, in the care of abutting properties, to enable them to withstand floods and storms. He would not have the soil with its cover, whose function it is to conserve and regulate the rainfall and act as a spillway, so ignorantly handled that the dam itself would give way with undue and unnecessary loss of life-giving matter and of property interests.

He was not misled by the popular cry of soil exhaustion or soil robbery as indicating a fundamental and permanent impairment of soil material, which he knew better than any of us can not be accomplished by human agencies. He knew that on the whole crop yields are increasing through more intelligent use, but he did deplore the enormous amount of useless and misdirected energy of the individual in methods of handling the soil and in improper crop adaptation, which amounts to gross abuse and present impairment of the productive powers. Again it was not the material he was worried about, but the methods of utilizing it.

He believed that erosion and leaching, if properly used and controlled, would work for the benefit of mankind, just as he believed that the intelligent use of the soil improves the soil for the special needs of mankind. He was a great conservationist through methods of using natural material rather than through saving the material itself. He was not one to wrap his talent in a napkin and at the end say "I was afraid and went and hid my talent in the earth; lo, there thou hast that is thine."

Doctor McGee's attitude as I have sketched it should be that of all true conservationists. It is the strongest impression I have of Doctor McGee's purpose and work, to conserve, through control and proper development, the natural forces and materials of the nation by the people and for the people—by proper use and not by disuse—and his great mind and his wise counsel was so potent a factor among us, his associates, as to earn for him the greeting used by the Master

when He said to that servant who had ten talents and by putting them to proper use gained another ten talents—"Well done, thou good and faithful servant; thou hast been faithful over a few things, I will make thee ruler over many things; enter thou into the joy of thy Lord!"

The next speaker was Mr. Henry Gannett.

His tribute to Doctor McGee was that of an intimate personal friend of many years. The Committee deeply regrets that what he said has been lost.

The next speaker was Mr. N. H. Darton.

Mr. Darton said:

When I came to the Geological Survey some years ago, Doctor McGee was in charge of one of the divisions, and for awhile I worked under his direction. The field of investigation was the Atlantic Coastal Plain, and for several years I studied the geology of part of that province. My experience in this association with him was most pleasing, and it developed an appreciation of the man and a feeling of affection and tenderness for him that very few could have without such an intimate acquaintance.

We were studying in an area that had not been investigated in detail before, and most of the current ideas in regard to it were erroneous. A new system of classification had to be applied, and the genetic system developed by Doctor McGee proved invaluable. In the course of the work he was constantly giving helpful suggestions and useful data from his great store of information regarding the geological features in our area and in other regions. We were together often, and although the field work was my own the results obtained were greatly enhanced by McGee's assistance. The principal tribute I want to make here is to his very great generosity to those working with him. This was one of his strongest characteristics. All who came in contact with him received advice, suggestions, and valuable facts, and these were placed at their disposal without thought of credit to himself. He had not only a vast amount of experience and

knowledge in geology in various parts of the United States, and in other allied sciences, but he was a compendium of information along a great many other lines. He was indefatigable and unselfish in the search for facts and for their promulgation in advantageous manner. His genius for obtaining information and his unusual ability as a writer and speaker are well known to you.

I wish to say a few words as to his very great influence in the United States Geological Survey in the early days of its organization. I know how very intimately he was associated with Major Powell, and how effectively he assisted in shaping the policy and characteristics of that great organization. It was a labor of love with him, and he showed great skill in developing methods and conducting many of the affairs of the Survey in those days.

Personally, McGee was known to so many of you that I need hardly refer to his many fine characteristics. He was dear to all of us, I am sure. He was especially so to me.

The next speaker was Doctor Franz Boas.

Doctor Boas said:

I have been asked to speak of McGee's work as an anthropologist; but since he was one of the men whose scientific work was an expression of a powerful personality, an attempt to do justice to the scientist must include a consideration of the man.

I am probably not mistaken if I assume that McGee's interest in anthropology arose from his close association with Major Powell, for so long a time a dominant figure in the scientific life of our country, especially of Washington. When Powell withdrew from the Geological Survey, which he had so successfully directed for many years, and assumed the position as Director of the Bureau of Ethnology, McGee left the Survey with him. Owing to Major Powell's failing health, the administration of the Bureau of Ethnology fell more and more on McGee's shoulders. This was the period in which his anthropological work was done. With rare tact and unswerving loyalty to his friend, Major Powell, he conducted the affairs of the Bureau, so far as his position allowed him a free hand.

My own acquaintance with McGee dates back to this time. Im-

mediately upon his transfer to the Bureau of Ethnology, great pressure was brought to bear by some of his friends to have him elected president of one of our anthropological societies. At that time I opposed his nomination. At the same time the changes in personnel in a number of governmental and private anthropological institutions had led to some friction, also between McGee and myself. When, a few months later, I met him for the first time, the courageous frankness with which he took up our previous conflicts, and his unceasing straightforward endeavors to reestablish harmony among anthropologists, showed his true mettle and established our lasting friendship. For many years of more or less intimate intercourse he always proved the same upright courageous champion of his ideals, whom no timid consideration could turn from the path that he considered the right one.

His forceful character that was thus manifested, and his passion for making himself useful, made him a prominent figure in the progress of science. American anthropologists owe much to his initiative and persistence. I mention only his share in the foundation of the new *American Anthropologist*, that, largely through his efforts, became a National journal, when the Anthropological Society of Washington could no longer provide for the growing needs of anthropological publication; and his participation in the foundation of the American Anthropological Association, the form of which is largely based on his suggestion. This society differs from other scientific bodies devoted to the interests of special branches of knowledge in not being confined to a membership of specialists. Like many of our more general societies it includes many lay members. McGee's thoroughly democratic spirit and his belief in the possibility of solving scientific problems by application of common sense and honest sober thought made this type of organization more sympathetic to him than a purely technical society, and it was to a great extent due to his influence that this form was finally chosen.

McGee's scientific work belongs to the period in which certain well-marked tendencies developed under the strong influence of Major Powell's personality. Characteristic of the group of men who worked with Major Powell was the attempt to develop systematic thought, on the basis of certain principles, essentially by deduction. He and

his friends were ever ready to amass new material for induction, but their own minds set a definite stamp on the data, thus fitting them into a preconceived scheme. The importance given to deductive thought was also the reason why so many among this group of men were ready to attack scientific problems of the most divine kind, and why the craft of the expert was held in less respect by them than the open eye of a clearminded observer. With Powell the systematic idea had taken such firm root that he had planned a complete systematic description of American anthropology in a few volumes, which would have been an epitome of his philosophy. He even hesitated to make the full data on which this epitome was to be based common property of the scientific world. Although the work of some of his collaborators, like Dorsey and Gatschet, did not at all fit into this scheme, it was the ideal for which he was striving. McGee broke away from this concept, in so far as he recognized more clearly the necessity of detailed monographic studies of data, and of promoting new lines of research that might not fit into the system. Nevertheless his own inquiries were largely directed by his philosophic interest in principles, and the most characteristic feature of his own researches is the relatively slight basis of observation for far-reaching deduction.

At the same time the thorough saturation of his mind with the principles upon which his scientific facts were to bear made him an acute observer, and gave to his field-work an unusual value. He never became a gatherer of disconnected facts, but every observation had an immediate bearing upon some of the fundamental problems of anthropology as they appeared to his mind. I may mention particularly his studies of desert environment, which bring out this characteristic trait of his work most clearly. His short visit to the Seri Indians of the Gulf of California gave him the material for an elaborate treatise, which is remarkable on account of the ingenious interpretation of data, observed with great skill and care, but nevertheless fragmentary, an interpretation that can be understood only when we take into account the deductive basis on which he marshalled his array of facts. No less marked is this tendency in his investigations on primitive systems of numeration, on primitive trephining in Peru, and on the origin of agriculture. He never lost

touch with his data, but the basis of his thought was a system of anthropology, into which he tried to fit his observations.

Although, therefore, the value of his monographic studies stands and falls with the acceptance of his fundamental theories, his work itself, carried through under the impulse of a strong desire to contribute to the solution of great problems, gains its permanent value through the bearing of his detailed studies upon fundamental questions. In this sense McGee belonged to an older school of investigators. During the last twenty years anthropologists have come to be more and more worshippers of the accumulation of facts; and the more facts an investigator brings together, the higher we are inclined to value him. McGee did not belong to this class. For him the fact had a value only as related to a wider concept. While we are not likely to return to Powell's and McGee's points of view, I think we may observe a certain tendency to turn back from the over-enthusiastic, often unmethodical collection of data, and that theory and observation begin to find their proper relation.

The idea that stands out most clearly in McGee's work, even more so than in that of Major Powell, is that of the continuity of mental processes in all stages of civilization, an idea the value of which, I believe, will become the more apparent the farther our inquiries progress. This idea was not entirely new. It had found expression in Bastian's analysis of modern philosophic systems by means of comparison with the philosophic views of primitive man, and it was the fundamental note underlying Spencerian sociology. The beginnings of civilization had a meaning for him, on the one hand as steps necessary for an intelligent understanding of the history of mankind, on the other hand as illustrating the stepping-stones to future progress. He wanted to discover the conditions favoring creative activity, the only form of work that seemed to him worth while, and he hoped to find them through his study of the stages that led man from primitive to modern social conditions.

While other investigators were engaged in similar lines of research, McGee made these ideas the foundation of a new kind of constructive work; and it was his ardent desire to see the Bureau, that was at least in part in his charge, contribute to the welfare of the nation by advancing our knowledge of the conditions that make man creative.

I believe in this novel concept of anthropology which he formulated, and for which he strove with never-ceasing ardor, lies his greatest contribution to anthropology. True to the best traditions of productive scientific work, he gave the men who worked with him the greatest possible freedom in carrying out the work in their charge, while he himself was planning to develop the anthropological work of the Government so as to fulfill the larger mission that he had in mind. The task entrusted to the Bureau is the recording of the earliest history of our country as preserved in pre-historic remains, in the bodily appearance of the Indians, in their living tradition, in their languages and customs. He fully recognized the duty that we owe to our descendants, as well as to the whole civilized world, of gathering these data, that are all too rapidlly disappearing; that we must not expose our generation to the reproach of having neglected our duty to posterity by failing in this work—an omission that no future regrets can ever make good, for after our generation the very basis of work of this kind will have disappeared.

However, McGee saw further than this. The forces that are active in the primitive society of America are still at work, and come into play in the absorption of our immigrant population; in the relations between white, negro, Indian, and Mongol; in the economic conflicts of the day; in the biological conditions of modern life; in the deleterious and beneficial effects of changed modes of nutrition and living; in the inheritance of valuable strains; and the elimination or preservation of the weak. The necessity of solving national problems by means of anthropological research, that during the last few years has come to be recognized most clearly in England, stood out before his mind as an end towards which an anthropological bureau supported by the Government should strive. His recognition of the problem was clear. He expressed his idea once in this form: "We try to conserve our natural resources. Anthropology must do its share for the conservation of human energy. It is our duty to find out how this can be done." His thoughts were largely devoted to the question how to build up a scientific bureau that could realize these aims. He was clear in his mind that scientific painstaking researches had to be the basis of this work, and it was his desire to have anthropological work organized on this wider basis.

His hopes were not realized. However, we may see even now that his viewpoints find wider and wider acceptance. Here and there in a disconnected way, often carried to extremes by over-enthusiastic confidence in the meagre results so far attained, this anthropological view of society finds expression; and I feel confident that the larger view, to the establishment of which McGee contributed a liberal part, will ultimately prevail. When we reach that period when a true anthropological survey of the nation stands side by side with the biological, geological, and physical survey of the country, let us remember the great mind that fought in advance of his time, but not in vain, to realize this great aim.

The next speaker was Colonel H. C. Rizer.

Colonel Rizer said:

W J McGee was born in Dubuque County, Iowa, April 17, 1853. He drifted with uncertain aim until he reached maturity, when he definitely took up the study of geology for a career. He became connected with the Geological Survey in 1883 and continued there until 1894, when he became an anthropologist and followed his old leader, Major Powell, to the Bureau of Ethnology. He resigned from that Bureau in 1903 to become chief of the Anthropological Department of the St. Louis Exposition. At the conclusion of his work there he became connected with the Bureau of Soils, Department of Agriculture, where he continued until he died.

His most important work perhaps was as a member of the Inland Waterways Commission and in aid of various phases of the Conservation movement. He died at the Cosmos Club, Washington, D. C., September 4, 1912.

To me the most striking characteristic displayed by Doctor McGee was found in his wide range of information. He knew much of some things and he knew something of many things. Whether much or slight, what he knew in some way near or remote related to human interests or human activities. He had a marvelously retentive memory. Things once carefully noted seemed to be permanently photographed. In private conversation or in a public gathering the introduction of a subject would find him a ready participant and an inter-

esting contributor. He was fond of combating antagonistic views and was glad to proclaim his own. Yet he never seemed to be tinctured with pedantry. He enjoyed wit and humor, but cared little for amusements that others usually find attractive. Many years ago at his suggestion I accompanied him to Kernan's to witness feats of strength performed by a man of rare muscular development. I went for diversion and was entertained, while he went for the opportunity to study and was rewarded. Another time I went with him to see an alleged petrified woman. Neither of us believed there existed an authenticated case of petrification of a human body. I was satisfied at viewing a well molded form, but he, imbued with the scientific instinct, secured permission from the owner to make a test, and at a subsequent visit drilled a hole in an arm of the form and turned a phenomenon into a fake by exposing a piece of gas pipe.

Many instances might be recounted of his propensity to test or investigate and bring to light the facts before consenting to a possibly false claim.

He was at all times an optimist. He had absolute faith in the progress and development of the human race and believed it the duty of everyone to use his best endeavor to further this end. Even as death's gloom rapidly settled upon him he manifested his confidence in the final triumph of Science over the malady that was remorselessly dragging him from life.

He looked to the educated investigator for the solution of problems, but if the end sought was accomplished by an empiric he accepted the result gladly.

He was an industrious man and capable of sustained exertion. He said he needed ten hours sleep in each twenty-four, but I have known him to work thirty-six consecutive hours with brief intermissions for eating only.

His life habits were simple. I never knew him to be addicted to extravagent indulgence. He was profligate of his limited means, however, in responding to appeals for aid, and he was sometimes the victim of parasites. He was not wanting in sympathy, but at times I thought him wholly lacking in the element we call emotion, and I never but once saw a manifestation of it in him. This was about a month before he died when I related to him a highly complimentary

reference to him by one whom he probably esteemed first among his personal friends and with whom he had for several years worked in complete harmony on various phases of conservation. As I concluded my statement his face flushed, a lump seemed to rise in his throat, and moisture came to his eyes. It was with difficulty that he regained his self-control and gave expressions of his deep feeling of gratitude.

Two days after he was confined to his bed from a fall he requested to see me. Upon my visit to him that afternoon he told me in a simple matter-of-fact way that he had reached the beginning of the end—that he was the victim of cancer in an advanced stage, and that there remained to him but a few weeks of life. He said it was his desire to have his brain sent to Doctor Spitzka, of Philadelphia, and his body given to some institution that it might be dissected in the interest of scientific investigation. He knew that I always remain in Washington through the summer, and as it was necessary for the one upon whom he relied to be here when the end came he wanted to know if I would consent to being named as his executor. His mind seemed relieved upon receiving my consent and the next day he dictated his will.

He lingered more than two months and was almost a constant sufferer. At first he was always glad to engage in conversation and took a keen interest in passing events. He would at such times seem to forget his condition, and not infrequently indulge in his old-time chuckle at some humorous passage.

He was unable to retain nourishment, and gradually became weaker physically. Soon he began to show mental weariness and became slow of speech, losing the old readiness of uttering the word that best conveyed the thought he desired to express. Then came mental mistiness and periods of unconsciousness, and thus he died.

The next speaker was Mr. F. W. Hodge.

Mr. Hodge said:

It would be difficult for one who was so long associated with Doctor McGee in an official and personal way, to present, in a few moments, even a brief appraisal of his many qualities. To such a one four

characteristics of the man stand out prominently among many others: his indomitable energy and capacity for work; his unbounded generosity in its widest sense; his kindliness of spirit; and his helpfulness, especially to younger men.

McGee's energy and capacity for work are well known to all who knew him. Time and again I have known him overwhelmed with duties of many kinds, but never the time when he was not ready and willing to take on another burden. His energy was stupendous, and his physical endurance for many years such that, day in and day out, for weeks and months together, he would labor from early morning until well after midnight and yet without the staling of his mental or physical vitality. Of his versatility others have spoken. McGee was interested in everything under the sun worthy of his interest, whether politics, religion, hydrography; the origin of mathematics (a subject in which he was particularly interested and for a thesis on which he was accorded his doctorate); geology; economics; mechanics, his knowledge of which had its inception at the forge; the play of men and animals; the beginnings of primitive and social institutions; prehistoric surgery—indeed there was almost no phase of the science of man to which he did not devote some serious attention or contribute from the sum of his knowledge.

McGee's unlimited generosity is known to all. It would require many times the brief period allotted me to recount half the generous acts that chanced to come under my personal observation. He was the first and the last resource for all classes of hangers-on as well as for those who were not habitual parasites—cowboys and Indians down on their luck, decayed scholars, and many others who, knowing that McGee had never learned the first lesson of refusal, found in his means, limited though they were, a perennial fountain of pecuniary blessings. I never knew an appeal to McGee for aid, of whatever nature, to pass unheeded, and we are all pretty well aware of what his worldly resources were.

But it was not alone his generosity in such directions, but his enthusiasm, the inspiring influence of his personality, his energy and capacity, of which all of his associates imbibed and from which they have become the direct beneficiaries. It was impossible for one of

his coworkers not to feel the spark of his enthusiastic nature, the full effect of his prodigious energy and versatility, and his interest in all worthy things.

The next speaker was Professor Joseph A. Holmes.

Professor Holmes said:

It was my special commission tonight that I should endeavor to fill up any odds and ends that might be omitted in the preceding discussion. One of the things that has always interested me in connection with Doctor McGee is a thing which has been touched upon but lightly, and that is McGee at play. That can be discussed very briefly because, strictly speaking, McGee never played. I doubt very much whether he played in his boyhood days, for certainly in his mature manhood he never knew what it was to play. I was associated with McGee in the Atlantic Coastal Plain work, and later in connection with the work of the St. Louis Exposition, Doctor McGee having charge of the Department of Anthropology. One of the things which always interested me in trying to study McGee at play was his fairness and his gentlemanliness. I have been with McGee day after day, month after month, at the work table, lunch table, and otherwise. McGee never rested except when he was asleep. McGee did rest well, however, when he slept. It was fortunate that he did sleep soundly, and I think one of the great secrets of his immense intellectual activity was that he rested while he rested, and therefore, was able to work while he worked.

I never heard McGee tell a story or an anecdote, or give an expression that could not have been given before this audience.

I remember taking a trip with him across Virginia, the Carolinas, Alabama, and Mississippi. When we reached the Mississippi, I asked to see some of McGee's notes, and he said he was going to write them out when he got back to Washington, and the remarkable accuracy with which he had remembered the details of section after section of that trip was one of the marvels that impressed me about him. When he got back to Washington, for some thirty-six continuous hours, with very short stops for meals, McGee dictated the notes which developed into a volume.

I remember that in the summer of 1907, Pinchot, McGee, and I were out in the southern Sierra Mountains in California, supposedly resting. It was during that time that many of the Conservation plans, which have disturbed somewhat the even tenor of our ways, were formulated. I was a listener, and a good rester. They made the plans. One of the things that occurred was that when we passed over the mountains, we went over formations McGee had visited fifteen years before. McGee would tell me time after time with great detail what I was going to see when we came to a certain bluff, and I would see just what McGee had told me.

One of the things in connection with the St. Louis Exposition work illustrates McGee's life as an administrative officer. He went to the Exposition under exceedingly trying conditions. There was little in the way of funds at his disposal and rather an unsympathetic administration. But with all these discouragements McGee went forward and brought together an exhibit representing all the different races of mankind such as we have never had in this country before or since, and there he showed an infinite tact in getting along with people under exceedingly difficult conditions. One of the secrets of that was that McGee always had a good word to say for the other fellow. People got tired of not doing the things McGee wanted them to do simply because he was such a good fellow. It was a great privilege to be with him and work with him. He gave the most helpful sort of help I have ever had.

The last speaker was Mr. Gifford Pinchot.

Mr. Pinchot said:

My real knowledge of Doctor W J McGee began when I came to Washington to take charge of the old Division of Forestry in the United States Department of Agriculture. As a beginner in the work of organization, and with little experience of governmental affairs, McGee's helpfulness made an enormous difference to me at the start. It was not only that he put his great experience and wide knowledge at my service. That did very much, but what I think did even more was his consideration for the beginner and the feeling he gave me that in his view as an older man my work and I were both worth while.

Gradually his breadth of knowledge and of interest made its deeper impression. I came to see not only that his mind was encyclopedic in the extent and accuracy of its information on countless subjects, but that his vast mental activity was tempered and guided by the informing conviction that what he knew was valuable only as he could make it serve the human race. It was this quality fully as much as his enormous scientific erudition which gave him the indispensable place he occupied in the Conservation movement.

Without McGee the Conservation movement would either have been delayed for years, or would have been feeble and halting at birth. His contribution to it has been far too little known. This was due in part to the unavoidable circumstances of the case, and in part to a generosity without parallel in my experience among scientific men. McGee's generosity was of that rarest type which is willing to supply ideas and the expression of ideas without asking to be known in connection with them. Many and many a passage in Roosevelt's Presidential messages and in other state papers dealing with Conservation had its first beginning in McGee's penetrating intelligence. Many and many a statement like the Declaration of Principles of the great Conference of Governors, and the final Declaration of the North American Conservation Conference, of which conference he was not even a member, would have lacked much of their quality and power except for his guiding hand.

So far as such a thing can ever be said of any one man in a movement so extensive, McGee was the scientific brains of the Conservation movement all through its early critical stages. The distinguishing fact about that movement from the first was its joint consideration of all the natural resources together as the working capital of humanity, and its object to make the best practicable use of them for the greatest good of the greatest number for the longest time. The wide and balanced knowledge of this continent which was so striking a peculiarity of McGee's intellectual equipment naturally fitted him for this work in a very high degree, and gave him his very special place in the history of Conservation.

McGee at least as much as any other one man was responsible for formulating the plan for the Roosevelt Inland Waterways Commission, which for the first time in any national project considered

as a single problem the wise handling of all the natural resources of the continent. As Secretary of this Commission and as unofficial adviser and guide of all of the inland waterway associations, McGee played a part in the development of our rivers the importance of which it would be difficult to overstate. Of all his services to the Conservation movement, this was the one which carried most clearly the impress of his personality, and in which his contributions were most effective. In convention after convention of commercial bodies all over the United States and in the action of Governors and Legislatures on this deeply important subject, it was McGee's mind which inspired and guided the decisions taken. His relation to the National Irrigation Congress during the latter years of his life was hardly less decisive, and yet in both of these directions, except among the men who were actively responsible, his participation was comparatively little known.

McGee was not a member of the Public Lands Commission, nor of the Country Life Commission, yet in both, and especially in the latter, his influence was deeply felt. He was one of the two men upon whom rested the arrangements for the great Conference of Governors held at the White House in May, 1908. Many of the utterances which attracted most attention at that conference were prepared by him or with his assistance, and the breadth of view which characterized it would have been absolutely impossible without his aid.

Out of the Conference of Governors grew the National Conservation Commission. Officially McGee was merely secretary of one of its four divisions, that which dealt with the waters of the continent. Practically, in every branch of the Commission's work he was the trusted and effective adviser, a very fountain of knowledge, without whom the material for its historic report, the first inventory of the natural resources of any nation, could not have been brought together. Important as his services were as a geologist, as an anthropologist, and still more because of what he was as a man, I believe that his work in Conservation will ultimately be seen to have outweighed all the rest.

McGee's grasp of human life as a progressive development in time and space was as wide as his conception of the interrelation of natural resources, which is the basis of Conservation. He saw not only

acutely and with the finest intellectual honesty, but also with the broadest comprehension of relations of every kind. For many years I was in effect his pupil. I have never met a man whose imaginative suggestiveness in scientific work and in the application of scientific results to human problems could be compared with his. It was always the application of knowledge which appealed to him. His mind passed easily across the details of a scientific problem to its application in matters that would count for the welfare of the people.

I have never forgotten how he first suggested to me that the saving of the natural resources for the benefit of the people, through the Conservation movement, involved as one of its main problems the whole monopoly question. At first the idea seemed to me fantastic. Gradually I came to see with him that the use of the resources is fully as important as the saving of them, and that one of the great phases of Conservation is the problem of the concentration of natural wealth in the hands of monopolists.

The breadth and reach of Doctor McGee's interests may be indicated by a partial list of the subjects in which his helpful influence was strongly and effectively exerted. Of geology and anthropology I must leave others to speak. His work in Conservation dealt with navigable streams, waterpower, irrigation, potable waters from wells, and springs, and streams, the laws of streamflow, the whole subject of erosion, including as a single example the methods of avoiding erosion by contour plowing on hilly land, the protection of coal and oil lands from misappropriation, the saving of the phosphate lands for the people, forestry, with particular emphasis on the Appalachian National Forest, the public lands, the whole question of country life, etc. His interest in humanity made him a radical in politics, to which he gave much philosophic attention both as a branch of applied anthropology, and as an instrument for human progress. This interest led to his quiet but exceedingly practical participation in law making to such an extent that many laws with whose passage he had, ostensibly at least, little to do, in fact bore the impress of his forceful influence or were originated by it.

McGee's capacity to see and judge himself and his affairs without selfish bias was as remarkable as his mental achievements. Only a man of flawless courage and complete unselfishness could have reached

so high a point of personal detachment. Instances of his physical bravery are the common property of all his friends, while every man who knows the circumstances of the last months of his life recognizes in him the expression of moral courage of the highest and rarest kind. The certainty that his days were numbered, that they would probably end in prolonged agony, unrelieved by the companionship of his wife and children, left him cheerful, clear-eyed, wholly without self-pity, calm and sane in his determination to use what powers remained to him for the completion of his work. What is more remarkable still, while consciousness remained he was as keenly and unselfishly interested in the affairs of his friends and as little prone to concentrate upon himself as in the days of his greatest vigor.

Beneath McGee's scientific attainments and mental power lay the nature of one of the most kindly and genial of men, a lover of his neighbor as himself, full of that finest courtesy which is never out of fashion. His invincible serenity of soul made him the most delightful of companions, and gave him perfect courage to speak the truth as he found it. He was a great gentleman.

ACTION OF SOCIETIES AND ASSOCIATIONS

Representatives Appointed to Attend the McGee Memorial Meeting

American Anthropological Association—F. W. Hodge.

American Association of Museums—Frederick L. Lewton.

American Civic Association—H. K. Bush Brown, Richard B. Watrous.

American Forestry Association—P. S. Ridsdale.

American Institute of Electrical Engineers—J. H. Hanna, E. B. Rosa.

American Society of Mechanical Engineers—William H. Bixby, Calvin W. Rice, Joseph A. Holmes.

Anthropological Society of Washington—D. S. Lamb, Donnel F. Hewitt, Daniel Folkmar.

Biological Society of Washington—F. H. Knowlton.

Chemical Society of Washington—F. W. Clarke, Wm. Blum, F. K. Cameron, W. F. Hildebrand.

Columbia Historical Society—Theodore W. Noyes, W. B. Bryan, M. I. Weller.

Explorers Club—Robert E. Peary, D. L. Brainard, Henry Brevoort Kane.

Lakes to the Gulf Deep Waterways Association—W. K. Kavanaugh, G. A. Buder, Edwin S. Munroe, Major Wood, T. Edward Wilder, E. S. Conway, Wm. F. Bourland, Wm. H. Russe, W. M. Kavanaugh, Geo. B. Logan, John F. Messmore, J. F. O. Reller, Arthur Leach, E. H. Deffebaugh, Lyman E. Cooley, H. H. Walker, Alex. Y. Scott, James S. Warren, H. F. Auton.

National Conservation Association—Herbert A. Smith, Philip P. Wells, H. A. Slattery.

National Conservation Congress—Thomas R. Shipp.

National Rivers and Harbors Congress—Thomas Wilkinson, S. A. Thompson, M. I. Weller, Perry A. Randall, J. M. Goulden, Howell M. Miller, George Ward Cook, John I. Martin.

Philosophical Society of Washington –L. A. Bower, J. H. Gore, C. K. Wead.

Sequoya League—Alice C. Fletcher, F. W. Hodge, C. Hart Merriam.

State Historical Society of Iowa—H. M. Towner.

Upper Mississippi River Improvement Association—Thomas Wilkinson.

MEMORIAL RESOLUTIONS

From the American Academy of Political and Social Science:

WHEREAS, Death has deprived us of our highly honored fellow worker, and

WHEREAS, Doctor McGee had always shown a deep interest in the work of the Academy and was at all times ready to coöperate in the advancement of its purposes, and

WHEREAS, The Academy constantly benefited by his wise judgment and constructive suggestions;

Therefore be it Resolved, That the Academy herewith express its sense of loss at the death of Doctor McGee and its deep appreciation of the services which he rendered in furtherance of its activities, and record the same on the minutes of the organization, and

Further be it Resolved, That a copy of this resolution be forwared to the family of the deceased.

From The American Association of Museums:

WHEREAS, The late W J McGee was a charter member of the American Association of Museums and contributed materially to its early organization; therefore

Be it Resolved, That the American Association of Museums desires to record its keen sense of the loss which the Association and the museum interests of this country have sustained in the death of W J McGee; and further

Be it Resolved, That the American Association of Museums accept the invitation of the McGee Commemorative Committee of the Washington Academy of Sciences to be represented at the special meeting to be held on the evening of December 5 in commemoration of the late W J McGee; and that the Secretary be authorized to

invite Doctor Richard Rathbun to attend as the representative of the Association, or to secure the attendance in his stead of a member of the staff of the National Museum who is also a member of this Association.

From the Archaeological Institute of America:

At the meeting of the Washington Academy of Sciences in commemoration of the late W J McGee the Washington Society of the Archaeological Institute of America, as an affiliated society of the Academy, desires to express its deep sense of indebtedness to Doctor McGee as one of its charter members and officers.

Professor McGee was one of the twenty gentlemen who signed the call for the meeting at which our Society was organized, Monday, May 7, 1902.

He was elected a member of the original Executive Committee and continued to serve until he left Washington for St. Louis in 1903. He also represented the Washington Society in the Council of the Archaeological Institute for the years 1903–05, and was during this period a Vice President of the Institute.

From the Council of Chiefs of the St. Louis Exposition:

WHEREAS, Our highly esteemed co-laborer and very dear friend, Doctor W J McGee, Chief Department of Anthropology, Universal Exposition, St. Louis, U. S. A., 1904, has been removed from our circle by death, and

WHEREAS, The eminent services of Doctor McGee in assembling and installing an exhibit of rare excellence and exceptional scientific value at the St. Louis Exposition entitle his memory to due recognition, and

WHEREAS, His researches and writings in his chosen line of investigation before and since the Exposition are deserving of especial commendation of scientists, and

WHEREAS, The members of the Council of Chiefs so long and so closely associated with Doctor McGee during the Exposition are deeply afflicted in his decease; therefore, be it

Resolved, By the members of the Council of Chiefs of the Universal Exposition held in St. Louis in 1904, that we learn with much sorrow

of the death of our most worthy co-laborer, Doctor W J McGee, Chief Department of Anthropology;

Resolved, That we individually and as members of the Council of Chiefs of said Exposition, esteem it a great privilege to bear testimony to the excellence of character, the spirit of loyalty to friends, the devotion to the highest ideals, that made Doctor McGee such an esteemed friend and pleasant associate;

Resolved, That the family and friends of our esteemed co-laborer be assured of the fullest measure of our sympathy in his death;

Resolved, That the above resolutions be spread upon the records of this Council and a copy sent to the family of the deceased.

From the International Irrigation Congress:

WHEREAS, On September 4, 1912, Doctor W J McGee, formerly one of our board of governors, executive committeeman, and active member, passed away,

Be it Resolved, That this Twentieth International Irrigation Congress record in sorrow its high appreciation of the work and character of the late W J McGee, an enthusiastic advocate of Conservation and its practical application in irrigation and forestry, and an active worker in support of the Congress. His example of industry and devotion to scientific research in ascertaining the truth afford an example to all who are working for the public welfare. We sincerely deplore his loss.

From the Lakes-to-the-Gulf Deep Waterway Association:

Doctor W J McGee was a man of many parts.

He was best known and understood among his coadjutors in the domain of scientific research.

He was likewise recognized and appreciated by that large body of people concerned in the conservation of our natural resources.

He had singular aptitude in developing and expounding the principles of water conservation and in their practical application to the problem of transportation. He regarded a river system as a unit from source streams to the sea; and that its problems should be treated as a whole, so as to develop in one solution all the collateral utilities —not only regularity in flow and fixation of bed and banks, but also reclamation, water power, and sanitation.

Doctor McGee lost no opportunity to promote and broaden the public mind respecting sound economic principles in the development of our water resources, and he was a persistent attendant and participant at Waterway and Conservation conventions.

He was an ardent promoter of the Lakes-to-the-Gulf Deep Waterway project, and joined in the formation of a program for the largest possible development as a transportation route, coupled with reclamation of alluvial lands, the development of water power, and the solution of problems of the public health. He always had a working part in our conventions, and was an untitled but welcome member in our Counsel Board.

The annual convention of the Lakes-to-the-Gulf Deep Waterway Association, held at Little Rock, Arkansas, September, 1912, expressed its regret at the untimely passing of Doctor McGee by resolution hereto appended.

The spirit of Doctor McGee will go forward to the full fruition of his work, but the loss of a friend and colleague—clear of brain and with persistent purpose and courage, in the pioneer period of a great enterprise—cannot be replaced.

From the Seventh Lakes-to-the-Gulf Deep Waterways Convention:

We, the delegates of this Seventh Lakes-to-the-Gulf Deep Waterways Convention duly assembled, in appreciation and recognition of our own great loss and of the loss to our cause by reason of the recent taking by death of Doctor W J McGee, and in feeble recognition of his services as a friend and scientist, do declare:

That the services of Doctor W J McGee to science, to progress, and to the enlightenment and welfare of humanity have rightly earned for him the respect and gratitude of his fellow-men.

In particular we recognize his stimulating and broadening influence in the establishment of a sound and comprehensive ideal for the treatment of our waterways, and in formulating and securing public recognition for the fundamental truth that "every river is a unit from its source to its mouth."

We recognize also his vital part in the establishment of the Inland Waterways Commission, as secretary of which he was instrumental in laying down principles and policies that will guide and control the

utilization of the rivers in the United States for many years to come. The appointment of the Inland Waterways Commission led to the voyages of two Presidents down the Mississippi River under the auspices of this Association and as its guests. The wide and beneficent increase of public interest in navigation which these journeys produced was molded largely through the wise guidance of Doctor McGee into a national policy of waterway development. Without Doctor McGee's participation these achievements would have been impossible.

The same is true of the great meeting of Governors in the White House which awakened the nation to the impending exhaustion of its natural resources. This meeting, doubtless the most remarkable ever held in the White House, and one of the most influential in American history, was in its conception and plan, largely the work of Doctor McGee.

Courteous, modest, eager for the success and recognition of others rather than himself, Doctor McGee was generous beyond measure in giving help to every good cause, and in opening the resources of his marvelous knowledge and his powerfully creative mind to every fellow worker.

We mourn his loss both personally, and because he was the benefactor of his country and the friend of every effort to uplift mankind.

We rejoice at the result of his labors, which will survive to benefit the people of America and of the world for uncounted generations.

From the Mississippi Valley Historical Association:

The Mississippi Valley Historical Association desires to express its high appreciation of the services of the late Doctor W J McGee. His work as a geologist, and especially his extensive geological survey of northeastern Iowa, was of a high order of excellence and of historical as well as scientific value. As an anthropologist and ethnologist he contributed largely to knowledge concerning the Indian tribes of the Mississippi Valley, a field in which this Association has always taken a great interest. Finally, his services in the Department of Agriculture and on the Inland Waterways Commission can

not be overestimated in their importance to the people of the Middle West.

Doctor McGee was generous in his encouragement of this Association in the work which it has endeavored to perform, and whenever possible he rendered active assistance. In May, 1910, he delivered before this Association an address on the Conservation of Natural Resources which was a source of inspiration as well as of information. The Mississippi Valley Historical Association, therefore, recognizes in the death of Doctor McGee a distinct loss to the cause which this Association represents.

From the National Conservation Association:

We whose names are hereunder written, having been appointed to represent the National Conservation Association at a meeting of the Washington Academy of Sciences on December 5, 1913, in commemoration of the late Doctor W J McGee, and desiring to make fitting and formal record of our action to that end, have adopted the following minute, and request that it be entered upon the records of the Washington Academy of Sciences on behalf of the National Conservation Association.

Of the enduring value of Doctor McGee's contributions to science through the study of primitive men and institutions, and the investigation of the structure, history, and resources of the earth it is more fitting that others speak. It is our privilege to remember with gratitude the patriot and lover of mankind, whose insight perceived the relation of such studies to the problem of present and future human welfare, whose inspiration applied to that problem the scientific method in a quantitative measurement of the natural resources which are the basis of the life of all, and whose soul cried out for the equal participation of all in these impartial gifts of Nature. We honor the statesman whose vision, undimmed by political traditions or superstitions, foresaw a true government of the people made efficient to achieve general welfare for the people by the extension of National power to all National ends, and by a trained executive free to serve the people and responsible only to them. We mourn the great-hearted leader and friend whose thought was always of the work in

hand, never of the honor or reward due to himself. We revere the man who met death with serene and unconquerable faith in the ultimate and enduring victory of the cause of humanity for which his life had been spent.

[Signed] HERBERT A. SMITH,
PHILIP P. WELLS,
H. A. SLATTERY.

From the Fourth National Conservation Congress:

We here place on record our sense of the deep loss by the country through the untimely death of Doctor W J McGee, a member of a Committee of this Congress, a scientific man of broad attainment, and of the widest human sympathy, whose helpfulness in these Congresses and many similar meetings will be sadly missed.

From the National Geographic Society:

The National Geographic Society wishes to express, at this Memorial Meeting, its appreciation of the scientific ability and work of its former President, Doctor W J McGee. He was one of the world's foremost scientists, and his investigations covered a wide range of subjects. As geographer, geologist, and ethnologist, his work was masterly and his contributions to these sciences were among the most notable of his time.

In geography, his interests were at first in physical geography, or geomorphology. They are so numerous and varied, that it is possible to mention only a very few. One of the most important of his works is a classification of topographic forms by genesis, published as a brief brochure in the first number of the *National Geographic Magazine.*

It is difficult, if not impossible, to separate McGee's geographic work from his geologic work, since they were often carried on together, the one aiding and supplementing the other. Thus, he discovered that geologic history could in many cases be read from topographic forms, and in his work upon the Coastal Plain he used this means extensively in unraveling the geology.

He early studied glacial erosion and deposition, and many of the now well known and basic facts regarding the work of glaciers were first developed by him, including peculiarities of forms of moraines,

the formation of cirques, rock basins, U-shaped valleys, and hanging valleys. Indeed, the discovery of the significance of the "Hanging Valley" was a very important contribution to the science of glaciology, completely demonstrating, as it does, the power of glaciers to erode, and even measuring the minimum amount of erosion. He also discovered a method of determining the direction of ice flow, without depending upon glacial striae.

While McGee's contributions to pure science were many and great, his work upon the applications of science to man's well-being were none the less notable. Among these were his studies of the water resources of the country, with reference to navigation, irrigation, and domestic supply. These led to his appointment as a member and the Secretary of the Inland Waterway Commission.

His work in all these various lines of scientific activity led up naturally to the idea of Conservation. Of this movement he was one of the originators, and he was one of the chief members of the Conservation Commission—created by President Roosevelt—and the Secretary of the section devoted to Water Resources. His work on this Commission formed a fitting climax to his very useful life.

From the Papyrus Club of Saint Louis:

The late Doctor W J McGee, first Vice-President of the Papyrus Club of Saint Louis, in the administration of Doctor Alexander N. DeMenil, contributed much to the advancement of our organization on the scientific side of our endeavors. His several essays and addresses on archaeology and kindred subjects were marked by original thought, and his discourses on popular topics, of which he possessed an inexhaustible fund, were invariably profitable and pleasing to our members and invited guests. His prominent activity in Saint Louis educational movements redounded greatly to our advantage, and we recall all these efforts in our behalf and that of the general Saint Louis public with feelings of gratitude. We early learned to appreciate the fact that in Doctor McGee we had a collaborator capable of advancing the cause of popular science in this part of the country, an investigator and expert in research such as we have not had since. His free mind and warm heart endeared him to all with whom he came in contact. When he was called to a more promising field in

Washington we rejoiced that a fairer estimate of his abilities would speedily come to him, and in this we, in conjunction with hosts of friends, were not disappointed.

From the Sequoya League:

The Sequoya League, "To Make Better Indians," begs to add its tribute to the memory of W J McGee, who was one of its Advisory Board from its foundation until his death.

Its work for "making better Indians" *by treating them better*, was earnestly and effectively assisted by Doctor McGee, and his counsels and assistance were valued and effective. His own large nature, simple and unspoiled as that of the aborigines; his own character and achievement, almost as self-made; the gentleness of his heart; the directness and justness of his mind; the practical common sense gained by his experience; his knowledge of the needs of the Indian, earned by experience and hardship in the field—all these made him one of the most valued of our advisers.

We feel that his death was a loss not only to American science but to philanthropy, and the Sequoya League earnestly desires to join in whatever tribute of affection and respect may be paid to his memory.

From the Society of American Indians:

Resolved, That the Society of American Indians register its sorrow over the death of our departed friend and fellow member, Doctor W J McGee, who departed this life during the current year, and that we deplore the loss to the Indian race and to anthropological science of so enthusiastic a student. In this loss of a friend and fellow member we are consoled by the fact that the efforts of his life have proven an inspiration to many students of the race, and we feel sure that the results of his labors will live for many years to come. May he find eternal peace in the up-above world where both scientist and savage, who have wrought well, may greet each other as fellows with a common interest.

From the Washington Anthropological Society:

The interest that Doctor McGee had in anthropology seems to have been aroused during a topographical and geological survey

that he made in northeastern Iowa during the years 1877 to 1881. In 1878 he published his first paper on an anthropological subject. It was entitled "On the artificial mounds of northeastern Iowa and the evidence of the employment of a unit of measurement in their erection." In the same year at the meeting of the American Association for the Advance of Science at St. Louis he presented a paper "On an anatomical peculiarity by which crania of the mound builders may be distinguished from those of the modern Indians."

July 1, 1893, he became connected with the Bureau of American Ethnology, Major J. W. Powell being the Director. In 1894 Doctor McGee was made Ethnologist-in-charge, and at once instituted researches concerning the relation of primitive arts and institutions to environment. He continued in charge of the Bureau until 1903, a period of ten years and ten months, and during this time he did a great part of the administrative work. During the several trying years of Director Powell's illness, Doctor McGee did practically the whole of the administrative work, and at the time of Powell's death, McGee was Acting Director. It may be said that in preparing the characterizations of the papers that appeared in the reports of the Bureau, he applied the principles of psychology to the current researches of the office. He was a past master in apprehending the trend and significance of human activity.

Besides the administrative work of the Bureau, he made extensive field researches in northwestern Mexico, in Tiburon Island, in Arizona, in New Mexico, in California, in Iowa, and elsewhere, collecting ethnological and archaeological data. During the years 1894 and 1895 he made a study of the Indians of Tiburon Island in the Gulf of California, and the adjacent coast of Sonora; recording a large body of linguistic material of the Seri, Papago and Cocopa Indians. He made the only scientific expedition to Tiburon Island that has ever been attempted, and prepared a topographical map of the island. Some of the results of these researches have been published; others have not. Based chiefly on the material gathered by the late J. Owen Dorsey, McGee prepared a memoir on the Siouan Indians to serve as an introduction to Dorsey's "Siouan Sociology;" and based on a series of Peruvian trephined skulls collected by Dr. M. A. Muniz of Peru, McGee, in conjunction with Muniz, published a descriptive paper. McGee also published a paper on "Primitive Numbers," the

result of which was that Cornell College of Iowa, in 1901, conferred on him the degree of LL.D.

He resigned from the Bureau of Ethnology July 31, 1903, to take charge of the Department of Anthropology of the Louisiana Exposition held in St. Louis. He was also active in organizing the World's Congress of Arts and Sciences in 1904, of which he was the senior speaker in the Department of Anthropology.

The date that Doctor McGee joined the Anthropological Society of Washington cannot at present be given; some records of the Society have been mislaid. He was first elected a member of the Council January 21, 1890, and was reëlected many times afterwards. He attended the meetings of the Society quite regularly and took part in the discussions. He always spoke to the point and concisely and his remarks were listened to with marked attention.

He was President of the Anthropological Society of Washington from 1898 to 1900. In 1902 he was foremost in founding the American Anthropological Association, of which he was the first President. When the *American Anthropologist* was established in 1899, he was one of the constructive owners, sharing its financial responsibilities, before it came under the control of the American Anthropological Association.

McGee's conception of anthropology was broad; he closely followed Major Powell, and like him loved to philosophize. Perhaps it might be said that McGee's mind was essentially synthetic rather than analytic.

No small part of McGee's administrative success lay in his implicit faith and trust in his co-workers and subordinates in office, which naturally inspired them to put forth their highest endeavor, and gained for him their affection; he saw only the best in those with whom he associated. He believed in the ultimate triumph of the ideals of human yearning and endeavor. He was also sensitively responsive to every demand of his fellow-man, either for time, for sympathy, or for money. Herein was the source of his great generosity and altruism. His character was laid along universal lines rather than along the path of selfish narrowness and exclusiveness.

He was a man, take him for all in all,
We shall not look upon his like again.

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PERSONAL ESTIMATES

From René Bache, of Washington, D. C.:

That I should have enjoyed for a period of nearly twenty-five years not only the friendship of Doctor McGee, but also his confidence and esteem, is to me a matter of much pride.

He was the only man I have ever known to whom I could go and say "Give me an idea," with a confident expectation of getting one. He would treat that foolish demand with seriousness, and often would respond with a suggestion which I was able to turn into money.

The ideas Doctor McGee gave me put thousands of dollars into my pocket. I used to tell him that he had paid for the second story of my house on Q street.

This amused him. He was also amused when I told him that he never could say a thing a second time as well as he could the first.

Let me explain that the experienced newspaper man rarely takes the trouble to put down verbatim the words of a person whom he interviews. What he wants is facts and ideas; he can usually write them better than the man interviewed can talk them. But with Doctor McGee it was different. Not to take him verbatim was to lose, so to speak, the efflorescence of his discourse.

I am not a stenographer, and so I could not always keep up. I would have to ask him to repeat a sentence which he just uttered. But he never could put the matter as strikingly a second time.

This was characteristic of the born talker. Doctor McGee wrote well, but he talked much better than he wrote. The task of composition hampered the utterance of his thoughts. In conversation he would seize an idea and give it a twist which he himself a moment later could not reproduce.

Doctor McGee never lost a chance to help me. I never found him so busy that he was not ready to put his work aside for my benefit. He was always glad to help other people—believing, as he did, that the object of existence was by no means the pursuit of happiness, but rather the pursuit of usefulness. It was not merely information (full

as he was of it on an amazing variety of subjects) that he had to communicate. The special quality of his discourse was that it was *illuminative*. When he talked, it was as if he lighted a candle inside of a lantern.

To most people, things assume a certain appearance because they are accustomed to be seen from a certain standpoint. But Doctor McGee was intellectually stereoscopic. He would place his listener at a new angle with the subject under discussion, whatever it might be—whereupon it assumed an entirely new and surprising aspect. Often one saw it for the first time as it really was.

What we call "intellect" is understood to mean a superior degree of intelligence. But this definition I hold to be inadequate. Intellect properly signifies a distinct plane of mentality.

Who would think of referring to Doctor McGee as a "highly intelligent" man, or a "very clever" man? Such terms as applied to him would be absurd. He was something entirely different; and the difference was not one merely of degree, but of kind.

If the man of intellect be understood to represent a distinct psychic type, Doctor McGee was obviously a most striking and conspicuous example of that type. His was an intelligence raised to the nth power. It was of a quality unapproached save by a few individuals in each generation of the world's human product.

His record proved him a man of undaunted and indomitable pluck and will-power—as shown, for example, on the occasion of his wonderful journey alone across a waterless desert in Sonora. But the same quality was exhibited even more strikingly perhaps during the last years of his life, when, although dying by inches of a lingering and hopeless disease, he kept steadfastly on with his work, while displaying the unfailing cheerfulness under adverse circumstances which is at once the highest exhibition and the best proof of a noble courage.

From Doctor H. Foster Bain, of San Francisco:

I have always felt that I owed a good deal to the kindly interest of Doctor McGee at the time when I was a beginner.

I remember especially the first paper I presented to the Iowa Academy of Science. I suppose one always remembers his first scientific paper with especial interest, probably out of all proportion to the

real value of the contribution. In those days I knew very few men in the scientific world, but I bravely sent out my little pamphlet to all with whom I could by any chance claim acquaintance, and, among others, to McGee, who had once lectured to us when I was a student at Johns Hopkins. He took the thing as seriously as though it had been a contribution from one of the leaders of science, and wrote me a most careful and critical review in the form of a personal letter, at the same time making most illuminated and suggestive comment that led me in the next succeeding years into a very fascinating field of physiographic work. Apparently, to McGee, the young man working in a far state as a beginner was worth time and thought; and I have reason to believe that this was his habit of mind, and that many beginners, as well as myself, have him to thank for inspiration.

Later, as with Calvin I worked over the Pleistocene in northeastern Iowa, I realized something of what his own work as a beginner had been, and how he must have appreciated any help which came to him at that time. He really did a great piece of work in northeastern Iowa. It is hard to realize now how firmly fixed was the notion of one glacial period. In the area in which McGee studied, there are the drift sheets of three well defined periods, as we know now. He insisted that there were more than one and proposed two as the maximum of audacity. Such mistakes as he made were due mainly to the fact that he wasn't bold enough and did not claim more than two. It was because he tried to make the whole scheme fit in with this that he missed the well-marked and extremely significant drift border near Iowa City.

I saw something of McGee later at the time he was trying so hard to build up a museum at St. Louis. He had even then, although a much older man, a tremendous store of enthusiasm and energy, and all of us on the Illinois Survey who came in contact with him derived many fruitful suggestions from him.

From John Barrett, of Washington, D. C.:

I knew W J McGee almost intimately for many years, and he grew on me with the passing of time. At first I did not fully understand him, but later, when I came under the influence of his wide knowledge and his sincere enthusiasm, I realized that he was, indeed, a rare man.

Particularly was I impressed with his sincerity and with his ability to present strong arguments in favor of a cause in which he was interested. He was always master of what he undertook to debate, and he was a dangerous antagonist for the superficially informed. His wide acquaintance, moreover, all over the land enabled him to spread his influence and his knowledge, which was practical and effective. When he was taken away, not only science but the people of our country at large lost one of their ablest and truest friends. I am glad to express my profound regard for the memory of this remarkable man.

From George Eames Barstow, of Barstow, Texas:

Doctor McGee had great moral courage. The question with him was not as to the ultimate effect that his advocacy of any given cause should have upon himself, but only that the cause nearest his heart should succeed.

My relations with Doctor McGee, covering many years, on national efforts for conserving our National Resources, such as irrigation, forestry, deep waterways and the reclaiming of our swamp lands, were most intimate, and afforded me full opportunity to analyze his character. From it I derived great satisfaction and strength. His intimate familiarity with precedent and custom in social and diplomatic affairs was of great value in shaping the course of wise procedure in all our Congresses and gatherings for the promotion of the public welfare. His minute care in matters of detail as well as what concerned broad conduct always impressed me, and contributed in large degree to the great success that obtained in our endeavors. His unvarying readiness for full and friendly conference on vital issues always made him suggestive, but with due regard for the opinions of his conferees.

Doctor McGee's convictions were strong and his action pronounced on the lines of his belief, yet his conduct was tempered by true moderation. I could not pay a more just and ideal tribute to our departed friend than by saying that the characteristic in his life which most impressed me was his unselfish devotion.

From Governor N. C. Blanchard, of Louisiana:

I came to know Doctor McGee first in connection with the Mississippi River problem, and then in connection with the movement for the Conservation of Natural Resources.

I found him an exceedingly well informed and resourceful man. Indeed, so well equipped was he for intelligent discussion and consideration of the subjects mentioned, that I looked upon him as one of the country's leading experts thereon. His knowledge was so profound, and so well digested and systemized in his broad and comprehensive mind, that he was, indeed, in respect to these matters, a scientist.

In May, 1908, President Roosevelt invited all the Governors of the States of the Union to meet him at the White House in conference over the vital question of Conservation of the Natural Resources of the country. The Conference lasted three days and attracted world-wide attention.

During the course of its deliberations, it was thought advisable to appoint one Committee to embody in a report or Declaration the conclusions and results that should be arrived at by the Conference, and that this Committee should be composed of five Governors.

Accordingly, such Committee was created, and President Roosevelt named as the Committee the following Governors:

Newton C. Blanchard, of Louisiana,
John Franklin Fort, of New Jersey,
John C. Cutler, of Utah,
James O. Davidson, of Wisconsin, and
Martin F. Ansel, of South Carolina.

At the Committee's first meeting, Chairman Blanchard suggested that a sub-committee be appointed to prepare the report or declaration, to be afterwards submitted to the full Committee for its consideration, amendment, and adoption, and, in that connection, stated that if the work of preparing the draft of the report were turned over to him, he would call to his assistance Gifford Pinchot and Doctor McGee, both of whom were in attendance on the Conference. Accordingly the Chairman and Messrs. Pinchot and McGee were appointed a sub-committee to draft the report.

So the three of us "put our heads together," and after a labor of a day and part of the night, there was brought forth the draft of the report, which took the form of a Declaration of views and recommendations by the Conference.

The next day the full Committee adopted the report, and directed the Chairman to report the same to the Conference as a Declaration on Conservation embodying and formulating general conclusions on that great subject.

This was accordingly done, and after the reading of the Declaration before the Conference, and debate had thereon, the report of the Committee was unanimously adopted amid great applause.

Doctor McGee's services in preparing the Declaration were simply invaluable. The part he performed in this work greatly elicited my admiration, and my association in it with him and with Gifford Pinchot led to ties of close friendship, and is to me one of the most pleasant episodes and reminiscences of my life.

Referring to the Declaration on Conservation, I heard President Roosevelt declare, in an address before a distinguished gathering in Washington, where he and President-elect Taft were the speakers, that it was so important a work, an instrument of such transcendent importance, that it ought to be framed and hung in every schoolhouse in the land.

Doctor McGee was a rare character on the good and useful side of life. With all his great capabilities, the distinguishing trait of his character was his modesty in never claiming credit for himself, no matter how much he had contributed of origination, ability, resourcefulness, and industry to any work of broad scope and far-reaching effect.

His was a gentle, kindly, lovable disposition. I greatly deplore his death.

From J. Stanley Brown, of New York City:

It was my good fortune to have known Doctor McGee from almost the day of his arrival in Washington to take service in the United States Geological Survey. Then and there sprang up a warm friendship which continued uninterruptedly to the day of his untimely

death, so that whatever is here set down is in the spirit of kindliest remembrance.

Although many years have slipped by my first impressions of his personal appearance are still vivid. His most conspicuous outward characteristic was a pleasing manly vigor, indicative of abounding good health and unusual ability, both physical and mental. By reason of this, his power of sustained bodily and intellectual effort endured almost to the end of his career. Eyes and complexion were fresh and clear, and countenance frank and open, giving every evidence of kindliness, sincerity, and earnestness of purpose. His ever present smile was genial and inviting.

As these lines are written a delightful picture of McGee, mellowed by time and affection, arises before me. It was soon after his entrance on his duties. On a beautiful autumn day he started on foot to examine the geological formations of the upper Potomac River. To him there was no inappropriateness in appearing at the office minus a coat, and arrayed in outing shirt of a screamingly brilliant blue color, while a new and shining little axe dangled from the back buckle of his trousers. This startling costume was crowned with a black Alpine hat of western construction and ancient vintage. The outcome was a cross between a Baltimore fireman of the olden days and a juvenile camper about to enter upon his first experience. The episode nearly caused a riot of interest and comment among the members of the Survey, but many of us who smiled can recall the valuable contributions he made to the unraveling of the then unknown "Coastal Plain Geology" of the Atlantic Seaboard.

The kindliness, wholesomeness, and sincerity of McGee's nature were early recognized by his associates. No demand on him was so small or so large that it was not promptly met, and he gave of his best. Always the subject of good-natured friendly chaffing, it was ever taken in good spirit. There was never resentment or ill nature, and never was there heard from him a harsh or critical personal comment on his associates. Apparently there was no place for such things in his philosophy of life. He enjoyed fun and social intercourse, and maintained his part with repartee and story, but never was sarcasm or irony employed, nor was there even a hint of carelessness or coarseness in conversation.

Loyalty was part of his creed, whether to his friends or to what he believed to be the fundamental principles of life, while his devotion to the development of scientific knowledge was unsurpassed.

He brought to all of his problems intensity of concentration, unusual industry, and very clear perception, while his exceptional powers of expression enabled him to present his conclusions in the most orderly and convincing manner.

When the Geological Society of American was organized, some twenty-seven years ago, the determination of the form of publication of the Proceedings of the Society was intrusted to McGee. It was a most laborious and difficult task. As to these Proceedings, I made the following statement on the occasion of the twenty-fifth anniversary of the founding of the Society:

> As Minerva sprung, full grown and completely armored from the brain of Jupiter, so was the Society's publication created—a model of form and efficiency—by the sole effort and peculiar genius of one of the most competent and brilliant scientific minds the West has produced. In its essential features the *Bulletin* stands today as it did at the time of its creation.

The calm courage of this philosopher was revealed to me a few months before his death. In one of my infrequent visits to Washington I met him at the Cosmos Club, and as always we sat down together to get "caught up." He then told me of the malignant disease which had attacked him, and of his recent hospital experience in connection therewith. He spoke of the future, and with a simplicity and serenity I have never seen equaled said, "Well! I find since my resumption of my active work that my productiveness equals that of former days, and if the operation proves a success all will be well. If not, I fear it will be a short story." There were no heroics, just the words, spoken with dignity and courage, of a brave man who knew the trick fate might play him. It proved a short story, and soon there crossed the "Great Divide" one who was a real exponent in his life and in his death of the true scientific spirit. Indifferent to the trivialities of life, earnest in the pursuit of Nature's truths, sincere in his collection and presentation of them to the world, when the call came he met it in that calm confidence which comes from a realization that he had done his best, and that all was well.

From Senator Theodore E. Burton, of Ohio:

I knew Doctor McGee intimately and would have considered it a privilege to testify in person to my appreciation of his life and work. All his scientific attainments, which were especially marked in anthropology, geology, and hydrology, were utilized for practical ends and the benefit of the country and the race. A man of remarkable versatility and of big ideas, he dwelt not in the past but in the future. He drew his lessons from history, but he made them an inspiration for coming generations. He was above and beyond all a disciple of practical conservation, a believer that water was as much an asset of the nation as the land or as the minerals beneath the land.

It is frequently said that the influence of men is ephemeral, and that when they are laid away they are soon forgotten. This is doubtless true of the majority of us, but the name and work of such men as Doctor McGee will endure as long as men are interested in science and as long as people admire the work of genius.

From Doctor Frank R. Cameron, United States Bureau of Soils:

I first met Doctor McGee nearly twenty years ago, shortly after my arrival in Washington. I was not especially drawn to him then nor for some years later, although I recognized his great personal force. I greatly admired his devotion to the late Major Powell, but first became really interested in him on his return to Washington after the inauguration of the "Conservation" movement. We became close and even intimate friends.

My strongest recollection of Doctor McGee is of his intense devotion to the public interest and keen sense of personal responsibility thereto. Never, I think, at least during the last years of his life when I was privileged to know him well, did he commit himself to even a trivial act without more or less carefully considering its import on the public welfare. Certainly he never failed of this consideration in his conduct of his official work, nor was any one with whom he was brought into contact allowed to ignore or forget that the public interest must be kept paramount.

Some months after the surgical operation he underwent in the summer of 1910 he asked me to come to his office. Although at the

time he appeared to be steadily gaining his strength, he informed me that his own careful observations had led him to a definite conclusion as to how long he had to live and how many months of effective work were left to him. In this latter estimate especially, his prediction proved remarkably accurate. He then outlined to me his tentative plans for the best utilization of his time, and calmly invited my criticisms.

We had been having a series of conferences on the desirability of inaugurating some experimental work on mulching. I had disagreed with his a priori reasoning and did not think that it justified the expense incident to the particular experimentation he had been suggesting. This I knew to be very near to his heart, and I offered to set aside my own judgment and hurry the experimentation he desired. He declined, however, on the ground that as I alone would be able to use the results, I must accept alone the responsibility for using government facilities and had no right to permit my judgment to be warped or biased, even by the wishes of a dying friend and colleague.

Next in vividness is my recollection of his unfailing charity. He could and did dislike, and even scorn, ignoble men as well as ignoble actions. But his vision was clear, backed by a well controlled imagination, and he was always quick to see the good in men and their motives, and ready to credit them with it. He gave freely and without reserve of his vast learning and well of inspiration to others, especially to men of the younger generations with whom he came in contact. Always ready to listen when convinced of earnestness of purpose, he was a patient critic, a wise and considerate counsellor.

His philosophy was very puzzling to me. He was frankly an agnostic. His attitude of mind was to accept facts for exactly what they are, together with such correlations only as could not reasonably be doubted. Yet he would freely argue by analogy and thus be led into conclusions diametrically opposed to the necessary and sufficient deductions by accepted methods. He accepted as facts many ideas which to others were merely speculations, due, I think, to an inherent repugnance toward laboratory-bred ideas as compared with those developed in what he regarded as the necessarily broader and more comprehensive vision of the field man. His concept that the soil,

because of its complexity, is suborganic, led him to attribute to it characteristics of living organisms. Although flatly denying to water any constitution that would involve a sensory system, he still stoutly maintained that water could and does exercise a preference to be in the liquid phase, and never would he admit that liquid water is more common to human experience than vapor or ice simply because it is the stable phase at ordinary temperatures and pressures. Always, he held, we must push back our inquiries another step into the unknown. Atomistic concepts appealed to him far less than those of the phenomenologist, so that he was less sympathetic in his discussions with chemists and physicists than with experts in other lines of philosophic enquiry.

Great as was McGee's service to science in general, he left but comparatively little of permanent material value to soil enquiries. Three problems attracted his attention: the conservation of the soil water for the use of crops; the transport of soil material, or soil erosion; and the management of soils, especially the theoretical basis for the practice of mulching. To the last of these problems he gave a great deal of thought, and was convinced himself that the principal function of a mulch is to attract moisture from the air so that it could within the soil pass to the preferred liquid phase and there perform its normal function of aiding plant growth. To the first and second problems, however, he lent yeoman service by pressing them upon public attention, formulating them in terms that would appeal to the imagination; and by lending the weight of his remarkable personality and marvellous diction, forcing their importance upon the consciousness of all thinking men. That the details of his concepts of the mechanism of the water cycle and the life of soils as suborganic entities will quickly be forgotten detracts not at all from the debt we owe him, in broadening our vision of the scope of the conservation ideal to include our greatest material heritage, the soils of the nation, and their most important component, the soil water.

From Professor Collier Cobb, of the University of North Carolina:

I never knew a man of such wide and varied interests, or one who possessed more accurate and detailed information about them all, and always in relation to their bearing on human betterment.

Geologist and geographer, archaeologist and anthropologist, delving in the past while working always at the task that lay immediately at hand, his work looked ever to the future, making him our first conservationist. To him Mr. Pinchot owed much of his inspiration, and President Roosevelt no doubt found him a never failing source of information as well as a perpetual inspiration.

To young men he was ever a helpful friend, and there are some who were with him in the West who would not be alive today had it not been for his thoughtfulness where they were thoughtless. And this care for the welfare of others extended even to the savage men among whom he worked, and endeared him to everyone who came in contact with him.

From Dr. N. H. Darton, of the United States Geological Survey. A Memorial presented to the Association of American Geographers, December 28, 1912:

In the death of W J McGee science has been deprived of one of its most efficient workers, and mankind has lost a vigorous champion for its advancement. Had he been spared to us, he might have had many more years of continued usefulness, for he was only 59 years of age and in most respects was in fine physical and mental condition. McGee had always been a worker. He was remarkable for the universality of his interests. He was wonderfully rich in ideas pertaining not alone to those sciences in which personally he was most interested but also to the broader fields of general culture in which his companions might be working. A man of enthusiastic endeavor himself, he was bound to inspire enthusiasm in an honest worker in any field.

The variety of interests of which McGee was mentally capable was shown by a very early versatility. As an illustration of the latter I might mention that he had a large share in the great conservation movement, and was one of the principal advisors of the National Conservation Commission.

He was born on a farm in Dubuque County, Iowa, April 17, 1853, of Irish parentage. Excepting a short attendance at the county school he was entirely self-educated. As a boy he had much to do on the farm but gave all spare time to study, and at the age of 20 had

acquired the more important lines of information usually presented in schools and colleges, and had mastered sufficient law to practice in the justice's courts of his county. With some instruction from a blacksmith he became skilled in metal working, mainly for the purpose of making certain agricultural implements which he invented. He also learned land surveying, and at the age of 22 or 23 he began studying geology. He became so deeply engrossed with this science that he soon gave most of his time to it. It was at this time that he commenced his elaborate investigation of the superficial geology of northeastern Iowa, and the preparation of the topographic base for his observations then was his first geographic work. The maps and report were finally published by the United States Geological Survey.

McGee's first work for the government was on the building stones of Iowa for the tenth Census, and his report was of notable excellence. From 1882 to 1893 he was geologist on the United States Geological Survey, and during these 11 years his life was one of great activity in scientific work. He traveled extensively in field work, wrote voluminously, and was in close association with Director Powell in the development and administration of the survey. A summary of this work, written by himself when he left the survey and published in the fourteenth annual report, shows the extent and variety of his occupations in the 11 years of service. Of course it does not indicate his very great zeal and usefulness, which were of incalculable value at that stage of the survey's development.

His first assignment was to assist Russell in the Lake Lahontan investigation where he proved highly efficient. He went to Washington City in 1883 and Powell, quickly recognizing his ability, kept him there for much of the time in the following years to assist in administrative matters. He aided in perfecting cartographic methods, served on the correlation board, and gave much attention to the classification of data available for the use of the Survey. He compiled maps and reports, started the dictionary of formation names and the thesaurus of American formations, and he represented the Survey at the Berlin meeting of the International Geological Congress. In connection with his study of cartographic methods McGee

prepared a number of geologic maps, largely for the purpose of illustrating the Survey scheme, but which were very useful compilations. The first of these was the geological map of the United States prepared with the assistance of Professor C. H. Hitchcock, and published in 1885 in the fifth annual report. It was on the scale of 100 miles to the inch and very beautifully executed. Another edition of this map, incorporating results of a large amount of new field work, was issued in 1894 in Part 2 of the fourteenth annual report.

It was McGee's instigation and zeal that led to the preparation of the large geological map of the state of New York which was the first one published since 1844. In the first stage of this work McGee and Hall made a compilation of the geology, but the base was poor, and the information that could be placed on the map so fragmentary and indefinite as to location that the result was useless. With authority from the Director of the United States Geological Survey a new base was compiled from county maps, and the writer was transferred to the state work for parts of two seasons to map boundaries and piece together the work of local observers. The map was finally published by the United States Geological Survey in cooperation with the State. In the course of this work I heard from Dr. Hall warm praise for McGee's phenomenal keenness as an observer and his great ability to grasp the problems presented.

Early in his connection with the Geological Survey McGee was placed in charge of the Potomac Division of Geology, which was created to study the region contiguous to the basin of Potomac River, but the area was finally extended to comprise all of the middle and southern Atlantic coast province. He accomplished considerable field work himself in many portions of this area and directed the operations of a number of other investigators. Among the latter were Dr. G. H. Williams on the crystalline rocks of the Piedmont slope; Dr. J. A. Holmes, Dr. W. B. Clark, R. H. Loughridge, and N. H. Darton on the Mesozoic and Cenozoic geology of the Atlantic coastal plain; and Dr. E. A. Smith, L. C. Johnson, and Dr. E. W. Hilgard on the formations of the Gulf region and Mississippi embayment. He also had charge of work by Hay in Kansas and of Dr. Phinney's investigation of the gas in Indiana. At the time of the Charleston earth-

quake McGee was sent at once to the scene of the disaster, and he obtained a large number of data used later by Dutton in his report.

McGee's principal fields of personal investigation in geology were northeastern Iowa and the Atlantic and Gulf Coastal Plain. He also assisted Russell in the Lake Lahontan work and made a survey of part of Macon County, Missouri. His work in northeastern Iowa, which covered an area of 20,000 square miles, was done privately as already stated, before he became a member of the Geological Survey, although some supplemental work and the publication of the report were at governmental expense. In the Coastal Plain his observations were mainly from Maryland southward, and while some of the minor details of the classification and identification of deposits may not be verified at every point, the differentiation of the Potomac, Lafayette, and Columbia formations was one of the most important geologic contributions we have had. It matters but little whether or not the type locality of the Lafayette proves to be valid and that some marginal red sands are Eocene, for McGee made a master stroke in recognizing the fact that our coastal plain is covered by a widespread mantle of littoral deposits representing Pliocene time. It was recognized over an area of 300,000 square miles and was of greatest significance in the history of the continent. McGee's first name for this formation was the Appomattox, and its correlation with Lafayette was a later idea. When I began my association with McGee this formation had not been recognized north of the James River, but I found that it extended across Virginia and Maryland, and some outliers remained in New Jersey. The Potomac formation has proven to comprise a group of stratigraphic units varying in range in different regions, but widely separated from the Newark group below and from the marine Cretaceous above. It included the deposit which I separated later as Magothy formation but aside from this it remains as a distinct group.

The recognition of the Columbia formation was of great significance to geography as well as to geology. It was correlated with the earlier glacial deposits and found to cover nearly 150,000 square miles of the coastal plain. Its topography and components have most

important bearing on the physiographic conditions of the early Pleistocene time in the region south of the glacier.

For many years I was intimately associated with McGee in the Geological Survey under Powell, and I wish I could pay an adequate tribute to the value of his influence to me and to many other associates in those early days of the organization. He had marvelous ability to appreciate all bearings of an investigation and to make far reaching and important suggestions. His willingness to assist in guiding the policy and conduct of all lines of the survey work made him a most important member of the organization in those days. This was fully appreciated by Major Powell, who brought McGee into intimate association in all administrative matters, and his genius had much to do with shaping survey methods. He became a close personal friend of the Major's, and the two spent much time together.

McGee left the Survey with Major Powell at the time when the Major turned the great bureau over to the directorship of Mr. Walcott. McGee then became Powell's Chief Ethnologist in the Bureau of Ethnology, a position which opened up to him lines of investigation which were very congenial. On the death of Major Powell, in 1902, McGee continued with the bureau as acting director, but in July, 1903 on account of disfavor of S. P. Langley, Secretary of the Smithsonian, he severed his connection. This was generally regarded as a most unfortunate circumstance, as undoubtedly McGee would have accomplished a very large amount of ethnological work of greatest interest and value if he had continued as director of the bureau. However, he left to accept the position of Chief of the Department of Anthropology at the St. Louis Exposition, where he had opportunity to make a brilliant record for administrative ability. At this exposition he presented to the public a greater variety of natives of many parts of the world than had ever been assembled before, and illustrated their natural environments, customs, and products in a most instructive manner. It was one of the greatest lessons in geography that has ever been given, and one that had the largest audience. When the great fair was over McGee was placed in charge of the St. Louis Public Museum project, where he continued for two years till 1907, when he resigned to take up work in the Department of Agriculture

as expert in charge of Soil Water investigations. This position he held until his death.

McGee made many valuable contributions to geography. In the Great Basin work he investigated the cause of the peculiar curvature of lateral moraines issuing from gorges into broad valley bottoms; some conditions of erosion by glacial ice, especially in the development of cirques, rock basins and U shaped canyons; and the law of foothill development in that region. In his study of northeastern Iowa he ascertained the conditions under which certain drift features were developed, and set forth a method of determining direction of the ice flow without depending on evidence of glacial striae. In this work also he set forth a law of land profiles applied in the driftless area, and a law of varigradation in the stream gradients. In his work on the Atlantic Coastal Plain McGee added many notable ideas to our growing science of Geomorphy, then in its infancy. He showed that geologic history could be read from topographic forms, and this means was extensively used by him and by myself in unraveling the Coastal Plain geology. Another important mode of recognizing the formations was developed at the same time and that was by homogeny, or correlation by identity of genesis. This criterion was very essential where fossils were lacking. One very important phase of this work was in the differentiation of terrace deposits and correlation of terraces which represented the same stage in the topographic development of a region. It was by this means that I mapped many areas of Lafayette and earlier Columbia deposits as well as non-fossiliferous outliers of underlying Tertiary and Cretaceous deposits.

Some of these lines of work led McGee to develop a classification of geographic forms by genesis which was set forth in a paper published in the first number of the *National Geographic Magazine*. McGee's observations in lower California on his trips to Seriland and Tiburon Island afforded some very instructive facts regarding erosion conditions in arid lands. He found that sheet flood erosion was an important factor in levelling the surface and producing peneplains at various elevations above the sea. This idea has proven to be a very valuable one, and has greatly simplified our conception of the topographic development of certain regions.

The paper entitled "Outlines of Hydrology" which McGee pre-

sented to the Geological Society of America in 1907 was a very valuable contribution to geography. It was a philosophic presentation of the role of water in nature, and summarized in compact form a large amount of information. His paper on potable waters of the Eastern United States published in the fourteenth annual report of the Survey was a notably complete and instructive presentation of domestic water problems. This publication was in great demand and undoubtedly had a wide influence on the development of the water supplies and in guarding them from pollution. Throughout his work on United States Geological Survey and later, he gave special attention to relations between geology and soils and especially the waste of soil by erosion. His last large publication was a memoir on soil erosion issued by the Department of Agriculture in 1911. It treated not only of the conditions of soil erosion but suggested remedies which may prevent erosion and reclaim farm lands that are being damaged by it. There is now in press in that Department another publication, "Field records relating to Subsoil Waters." [Issued early in 1913.—Ed.]

McGee always had great interest in earth crust movements, and in 1894 he presented to the Geological Society a very suggestive memoir entitled "The Extension of Uniformitarianism to Deformation." In this contribution he reviewed the criteria relating to such movements and discussed the conditions causing deformations of various kinds.

McGee gave considerable attention to Dutton's law of isostacy and showed that isostatic adjustment, while sufficing to explain minor crustal oscillation, is insufficient to explain the greater movements of the earth's crust. He set forth some criteria for the discrimination of two primary classes of earth movement, antecedent and consequent. In his memoir on the Gulf of Mexico as a measure of isostacy McGee reviewed in 1892 the evidences of subsidence in the gulf region, especially as indicating that the land and sea are in a state of hydrostatic equilibrium. Evidence was presented showing that in former times, however, some of the movements were cataclysmic.

Largely in connection with his work in the Bureau of Ethnology McGee achieved great distinction in anthropology. He made many contributions to that science and devoted much time to its societies

and other interests. He was president of both the American and Washington societies and was editor and contributor to the section on anthropology in the International Encyclopedia. He was United States Commissioner in the International Commission of Archaeology and Ethnology, and in 1904 he was senior speaker in the World's Congress of Arts and Sciences. One of his most notable pieces of work while on the Bureau of Ethnology was an exploration of Tiburon Island in the Gulf of California. This island is inhabited by savages who had never been investigated before, and the expedition, which was a highly perilous one, afforded a large number of interesting and novel data. Another important item of his work in anthropology was the formulation of principles relating to geological evidence of human antiquity.

Probably McGee's most notable service to humanity was the prominent part which he had in the great movement for the conservation of our natural resources. He was one of the fathers of this movement, and exerted very powerful influence in its growth and promulgation. He also furnished a large amount of useful data, specially in the hydrographic line. He was a most prominent member of the Conservation Association, and his council was always of greatest service to that body. He was chief promoter of the project of having the great Conference of Governors which President Roosevelt brought to the White House in 1908. He was secretary of the Conference, guided its deliberations, and prepared the fine volume of its proceedings. He was made a member of the Inland Waterways Commission when it was created in 1907, and later was appointed its Secretary, an office in which he continued to the time of his death. He did a vast amount of work for that commission, and much of its value came from his services.

McGee was greatly interested in our scientific societies and had prominent part in their organization, meetings, and administration. He was a member and frequent attendant at all the societies in Washington, and the Historical Society owes its existence largely to his interest and energy. The National Geographic Society also had his aid in its inception and development, and he edited its magazine for several years. After his active editorship ceased he remained an associate editor until 1908. He was president of the society in 1904

and 1905, and held other offices in its administration. He strongly advocated the idea of making the society appeal to popular taste, and this policy has since made it the largest scientific body in the world, with a membership of 160,000.

He was greatly interested in the Anthropological Society of Washington, serving as its president, and in 1911 he was also president of the American Anthropological Society. In 1902 he was Vice President of the Archaeological Institute. He was one of the founders of the Geological Society of Washington, and made many communications to it in its early days. He was one of the small group of geologists who organized the Geological Society of America, and for many years he was editor of its bulletin. This publication had many novel and admirable departures from old time methods, and its form was copied by various other societies. In the earlier years of its existence he attended all the meetings of the Geological Society of America and frequently read papers. He was one of the original members of the Association of American Geographers, and gave us two interesting communications at the New York meeting in 1906. In 1904 McGee was chairman of the Organizing Committee for the International Geographical Congress, and he was appointed United States Commissioner to the International Committee of Archaeology and Ethnology and senior speaker at the World's Congress of Arts and Sciences. He was given the degree of LL.D. by Cornell College in Iowa, in 1904.

McGee died at the Cosmos Club in Washington on September 4, 1912, from cancer, which began developing in the prostate region some years ago. The progression of the final stage of the disease was slow, confining him to his room and then to bed for about two weeks, and there were four days of coma at the end.

With characteristic originality and desire to advance science, McGee willed his body to the surgeons of Jefferson Medical College of Pennsylvania, and his brain to Doctor Spitzka. After the simple burial service at the home of his close friend, Gifford Pinchot, the body was taken to Philadelphia in compliance with the will. At the same time there was forwarded to Doctor Spitzka the brain of Major Powell, which has been in McGee's possession since 1903. There had been some good natured rivalry between the two as to the greater

weight of brain; while McGee's brain weighed 1410 grains Powell's was 1488 grains, both far above the average of men in general, but in the case of McGee slightly below the average of the brains of 100 eminent men in Doctor Spitzka's possession.

I shall not present a list of publications made by McGee, for they can be found in the bibliographies of geology. They number more than 300. His most voluminous reports were on the "Lafayette Formation," "The Geology of the head of Chesapeake Bay," "The Pleistocene Geology of Northeastern Iowa," "Potable Waters of the Eastern United States," "Siouan Indians," "Seri Indians," "Primitive Numbers," "Soil Erosion," "Outlines of Hydrology," "Primitive Trephining in Peru."

Of the personal side of McGee I need say but little, for you all knew him. He was kind, gentle, generous, and inspiring. His aspirations were for the best results, and he strove unselfishly for the truth and the advancement of science. His mind was lofty, and had a deep insight into the beauty of nature. His friendship was a never-ending fountain of help, good cheer, and inspiration. I am proud that he was my friend.

From Professor H. L. Fairchild, of the University of Rochester:

For McGee's character, ability, culture, and disposition I have the greatest admiration. He was a remarkable and noble personality.

McGee did a fine stroke of work when he planned the form of the Bulletin of the Geological Society of America. He was at the first meeting and was made one of the committee on publications. With his characteristic energy and thoroughness he made a careful study of scientific periodicals, and in an elaborate report evolved the admirable form of the publication, which has been a model. He was made Editor of the Society, and the first three volumes of the Bulletin are the concrete expression of his ideas. Considerable part of the success of the publication and of the prosperity of the Society are due to his brainwork.

From Senator Duncan U. Fletcher, of Florida:

I knew Doctor W J McGee personally and admired him greatly. He was a thinker, public spirited and patriotic. His scientific attainments were of the highest order, and he was so modest and gentle he made warm friends on every hand who can never forget, "The tender grace of the years that are dead."

The Mississippi to Atlantic Inland Waterway Association was very proud of his favor. I first met him at Columbus, Ga., some five years ago, when I was elected President. He made a fine speech then and every year thereafter until this, when he sent us a strong and encouraging message since he could not attend our convention.

From Wm. L. Hall, of the United States Forest Service:

In 1911, when after years of delay the Government entered upon a policy of acquiring National Forests in the Appalachian Region and I was called upon to take part in the work, I found a most helpful friend and adviser in Doctor McGee.

The work was new and presented numerous problems. Many indeed had regarded these problems as so grave and difficult of solution as to question the wisdom of the Government's undertaking the acquisition of such lands at all. The conditions under which we had to work at first were not favorable. Large sums had been made available with but little time to use them. Machinery for the work was lacking. Land owners, in not a few cases realizing this situation, endeavored to turn it largely to their profit by offering lands at exorbitant prices. Manifold chances were presented for unfortunate mistakes which would quickly have brought the work into question, and blighted the hopes of those who saw in the movement an opportunity to conserve, develop, and rightly utilize the Appalachian Region.

In this situation I turned for advice and counsel to a number of men who had given deep thought to the welfare of this most interesting section. In Doctor McGee I found a man of broad understanding of the questions involved and of deep sympathy for the plan. No other man with whom I conferred seemed more accurately to appraise the scope of the work which had been undertaken and to fit the work into its place in the conservation movement. He saw

clearly relationships that were indistinct or indiscernible to many others. He distinguished the principles involved and looked far to the future.

We did not find it possible to accept all the suggestions that he advanced, but the principles which he had so well in mind awakened in myself a deeper appreciation than I had before of the far-reaching importance of the work which had in small part been placed in my hands. He helped me too by pointing out and emphasizing the chances for mistakes which at that time I did not fully appreciate.

This occasion gives me the opportunity I have coveted to say that Doctor McGee helped me to a better grasp of the Appalachian situation. He was a wise counselor and a ready friend at a critical time.

From Professor C. H. Hitchcock, of Honolulu, Hawaii:

I first met Doctor McGee at the Boston meeting of the American Association for the Advancement of Science in 1880. He had become a member of the Association two years earlier, at St. Louis. Somewhat later he sent me a contribution upon the geology of Iowa for my large geological map of the United States. I was quite surprised that a young man not known to fame should venture to correct the mapping of the geology of that State; but the correction was so obviously right that I immediately placed his delineation upon the map.

In 1884, McGee and I were associated in the employ of the United States Geological Survey in the preparation of a small geological map of the United States. We prepared a single copy, using the coloration devised by Major Powell and the classification of my earlier published map. Our maps were published separately later, one in the annual report of the United States Geological Survey in 1884, using the colors proposed by Major Powell, the other, with many changes, in the report of the Institute of Mining Engineers in 1886, designed to illustrate the scheme of coloration proposed by the International Congress of Geologists. The Survey map was confined to the territory upon which tolerably complete maps had been already published; mine very ambitiously endeavored to fill the gaps between the States and Territories, with data furnished unofficially by geologists more or less familiar with them.

Geologists will recall the earnest discussions during the late eighties and early nineties in connection with the attitude to be taken toward the International Congress of Geologists. One of the objects mentioned as calling for the institution of this body was the discussion of the schemes of color to be used for the representation of the formations. It was thought there might be a uniformity in a scheme to be adopted by the geologists of the different countries represented. The Congress led off in the discussion by adopting a scheme portrayed upon a new geological map of Europe. Among those who vigorously opposed its adoption was Doctor McGee, who proposed instead the scheme employed by the United States Geological Survey. After years of discussion, the parties still retain their original preferences. Though we were opposed to each other in the discussions we still retained pleasant social relations, especially in the entertainment of the International Congress in Washington in 1892.

Doctor McGee served as editor of the Geological Society of America, his name appearing upon the first three volumes issued. The peculiar features of the publication were largely outlined by him. In this work we were associated together.

After this we met often in the meetings of the Geological Society, and of the American Association; and discussed various phases of the glacial period. His most elaborate works were the reports upon the Lafayette and Columbia formations.

From F. W. Hodge, of the Bureau of American Ethnology:

Reprinted from the *American Anthropologist*, Vol. 14, No. 4, Oct.–Dec., 1912.

William John McGee, or, as he preferred to be known, W J McGee, was born on a farm at Farley, Dubuque County, Iowa, April 17, 1853, and died of cancer at Washington, D. C., September 4, 1912. He was the son of James and Martha (Anderson) McGee, of Scotch Irish ancestry, his paternal great-great-grandfather having been Alexander McGee of County Down, Ireland, who emigrated to the United States, while on the maternal side the line leads back to Samuel Anderson, of Irish parentage, who was born at sea in 1740. Both of these grandparents espoused the American cause in the Revolution. In his early years, although large for his age, McGee was frail in health, averse to manual labor, and rather uncertain in disposition;

and even in later life, notwithstanding his apparent robustness, he was not so strong physically as was generally supposed.

McGee attended irregularly a county district school, of the kind common to sparsely settled communities, until he was about fourteen years of age, from which time his education was almost entirely the result of intense individual effort, in which he was urged and stimulated by his mother, an excellently well-informed woman, who was anxious that her children should be well educated. The last one apparently to give him formal instruction, in 1867–68, was an elder brother. The boy proved to be an apt pupil, acquiring knowledge with wonderful ease and retaining it in what later developed into a really remarkable memory. These home studies were continued through the years 1867 to 1874, and included Latin, German, and higher mathematics. He also read law, and to a slight extent engaged in justice-court practice. His self-acquired knowledge of mathematics, which included astronomy and surveying, combined with field instruction by a maternal uncle, made him an excellent surveyor, and his services in this capacity were not only much in demand in the neighborhood, but increased his powers of observation during the outdoor work that ultimately led him into the paths of geology and anthropology. Meanwhile, when about twenty years of age, he worked at the forge and became engaged in the manufacture and sale of agricultural implements. In conjunction with an elder brother and a cousin, he invented and patented, June 9, 1874, an improved adjustable cultivator, but the device was not a commercial success.

As is well known, McGee's first serious scientific work was in the field of geology. In 1878 he was enrolled as a member of the American Association for the Advancement of Science in affiliation with its section of geology, and in the same year published his first paper on a geological topic. From 1877 to 1881 he prosecuted, as a private enterprise, a topographic and geological survey of an area in northeastern Iowa covering about 12,000 square miles.

It was evidently during this field work that McGee's interest in anthropological research was first aroused. In 1878 appeared his first paper on an anthropological subject—"On the Artificial Mounds of Northeastern Iowa, and the Evidence of the Employment of a

Unit of Measurement in their Erection"—an immediate outcome of his geological studies and surveys in the preceding year. At the meeting of the American Association for the Advancement of Science at St. Louis in 1878 he presented a paper "On an Anatomical Peculiarity by which Crania of the Mound Builders may be Distinguished from those of Modern Indians," in which, as in the case of his earlier paper, were presented views that, while characteristic of the period, are untenable in the light of present knowledge, but serve to illustrate the great advance made in the elucidation of archaeological problems during subsequent years.

McGee's first work under Federal auspices was a report on the building stones of Iowa, prepared for the Tenth Census (1880), published in 1884. This, but more especially his careful work on the multifarious phenomena of glaciation in the upper Mississippi valley, had attracted wide attention, and in July, 1883, when thirty years of age, he was called to the United States Geological Survey by its director, Major J. W. Powell, where for ten years he served as a geologist and performed important scientific work. On June 30, 1893, McGee resigned from the Geological Survey to assume on the following day the active charge of the Bureau of American Ethnology, under the directorship of Major Powell, with the title of ethnologist, and a year later his designation was changed to ethnologist-in-charge. During his service with this Bureau, which extended through a decade, he continued active scientific work whenever the pressure of the administrative duties of a Government office permitted. His most noteworthy undertaking in this direction, which resulted in his most important contribution to anthropology, was a study, during two seasons, of the Seri Indians of Tiburon Island in the Gulf of California and of the adjacent coast of Sonora, in 1894 and 1895. With a small party he conducted the only scientific expedition to Tiburon Island that had ever been attempted, and prepared a topographic map of the island home of the Seri; but as the Indians fled on the approach of the party, McGee did not come in contact with them on the island, depending for his information on a band employed by a Mexican ranchman near the Sonora coast. The results of these studies formed one of the accompanying papers of the Eighteenth Annual Report of the Bureau of American Ethnology. Subsequently

he spent several weeks in northern Lower California, making observations among the Cocopa Indians, but the results were not published. Based chiefly on material gathered by the late J. Owen Dorsey, McGee prepared a memoir on "The Siouan Indians" to serve as an introduction to Dorsey's "Siouan Sociology," both of which papers appear in the Fifteenth Annual Report of the Bureau. Based on a collection of Peruvian trephined skulls collected by Dr. M. A. Muniz, of Peru, McGee prepared, in conjunction with Dr. Muniz, a descriptive paper which was published in the Sixteenth Annual Report of the Bureau, while in the Nineteenth report he presented a paper on "Primitive Numbers," with the result that Cornell College, in his home State, conferred on him the degree of LL.D. in 1901. McGee's anthropological bibliography alone is an extended one, while his writings on scientific subjects generally are extremely varied and extensive. He resigned from the Bureau of American Ethnology, July 31, 1903, to assume charge of the Department of Anthropology of the Louisiana Purchase Exposition at St. Louis, where he was active also in organizing the World's Congress of Arts and Sciences in 1904, of which he was senior speaker in its department of Anthropology. At the close of the exposition he was appointed director of the "St. Louis Public Museum," which never developed much more than the name; and in 1907, after spending a period in the Papagueria Desert of Sonora and Arizona, he became associated with the Bureau of Soils in the United States Department of Agriculture as an expert in subsoil erosion and subsoil waters, which position he held until the time of his death. Meanwhile he became interested in the Conservation movement, and was selected as Vice-Chairman and Secretary of the Inland Waterways Commission, of which he was the leading spirit and in whose interest he was the most active worker.

In 1888 he married Anita Newcomb, who, with a son and a daughter, survive him.

McGee was a man of commanding presence, of remarkable mental vitality, ingenuity, and versatility, and of almost fanatical perseverance. He had a personal fondness for the unusual, as his preference in respect to the initials of his given name and his strong liking for the coinage of new terms suggest. But McGee was human withal, and the most generous character, both with his slender purse and his

store of knowledge, that any of his host of intimates ever knew. He was sympathetic and helpful, with almost unlimited ambition, and ever ready, whatever the cost, to resent any seeming interference with it. He was remarkably alert and resourceful, as an incident of one of the meetings of the American Association for the Advancement of Science will show. A local divine, mistaking McGee for a fellow minister, invited him to fill his pulpit at a Sunday evening service. McGee, although not affiliated with any church, immediately accepted, and selecting as his text the words "Love ye one another," delivered an address remarkable for its eloquence and replete with human sympathy and understanding.

McGee's interest extended to almost every branch of science, as his constant activities in behalf of and his affiliation with many scientific bodies attest. He became a member of the Anthropological Society of Washington soon after coming to the Capital and served as its President from 1898 to 1900. In 1902 he was foremost in the founding of the American Anthropological Association, of which he was elected the first president. When the *American Anthropologist* was established in 1899, McGee became one of the two constructive owners, sharing its financial responsibilities before it came under the control of the American Anthropological Association. The scientific and other learned organizations of which he was an active member are too numerous to list here.

The courage and fortitude, so characteristic of McGee in his most active days, he did not permit to desert him toward the close of his life. Aware of his fatal malady long before the end, he determined to note carefully the progress of the disease (which first manifested itself in the Sonora Desert fourteen years before), in the hope that the interests of learning might be subserved. The result of these observations was published in *Science* shortly after his death. Notwithstanding intense suffering and separation from all his kindred, and with full knowledge of the inevitable, he worked assiduously on the final revision of a scientific memoir which he finished on the eve of the final dissolution.

W J McGee was an unusually remarkable man. It would be a difficult task to appraise now the value of his varied contributions to knowledge, to recall even a tithe of his generosities, or to recount the

multitude of his interests. From early manhood he was a strong advocate of the diffusion of knowledge, and his last efforts were devoted to this lifelong purpose.

From Doctor Arthur Hollick, of the New York Botanical Garden:

The Cosmos Club brought Doctor McGee and me into social contact, and when our dining hour chanced to be identical we were accustomed to sit at the same table and discuss scientific subjects of mutual interest in an informal and unconventional way. I can well recall the last of these impromptu meals together, because it was such a short time before his death, and I learned afterwards, as we all are now aware, that he knew he was doomed at that time; yet no hint of what he knew ever intruded itself into our conversation, and his discussions and comments were apparently just as much concerned with work to be done in the future as with that already accomplished. It is this which makes me realize now, as I never did when he was alive, his wonderful self-control and will power—characteristics which make him appear to me as unique and conspicuous and inspiring a personality as that with which we all associate his scientific attainments.

The latter require no comment on my part. The reputation which he has achieved in such connection assures that those best qualified to recall them will not fail to do so. We were never associated together in scientific work, either as co-laborers or otherwise; but it is interesting to refer to the casual correspondence which passed between us during a period of over twenty years, and to note the variety of subjects in regard to which I had occasion to communicate with him—time estimates in connection with the subdivisions of the Pleistocene; paleolithic implements; lithologic characters of the Potomac clays; subdivision of the "yellow gravel;" soil erosion, etc.

It was a privilege to have known him, even as superficially as I did, and I appreciate the opportunity which permits me to tender this little contribution to his memory.

From Arthur Hooker, of the International Irrigation Congress:

W J McGee was born in Iowa on April 17, 1853, and died in Washington, D. C., September 4, 1912, aged 59 years. He had very

little of the schooling of the times, but belonged to the class of so-called self-educated men who have acquired the power of observation and of making use of this knowledge without the help of teachers. He grew up on a farm, studied, largely by himself, Latin, mathematics, astronomy, and surveying, read law, practiced before the local justice courts, and turned his attention to inventing and manufacturing agricultural implements, himself working at the forge and at the bench. He became attracted to the geology of the surrounding country, and on foot and by his unaided exertions, made one of the most comprehensive geologic and topographic surveys (of Northeastern Iowa) ever executed by an individual. This work attracted the attention of Major John W. Powell, Director of the United States Geological Survey, and McGee entered that bureau, being rapidly advanced to the charge of important field practice. Among other matters he compiled a geologic map of the United States, investigated the Charleston earthquake, and later explored Tiburon Island in the Gulf of California, the home of a savage tribe never before studied.

Gradually his interests shifted from geology to the study of mankind, and he became the principal officer in the Bureau of American Ethnology, and later Chief of the Department of Anthropology at the St. Louis Exposition in 1904. Those who visited that Exposition recall the unprecedented assemblage of the world's peoples. On the close of this Exposition he became Director of the St. Louis Public Museum, and later a member of the United States Inland Waterways Commission, and finally during the last years of his life, gave especial attention to the subject of distribution of water on and beneath the surface of the United States and to its industrial relations. His last work is a very exhaustive study of the gradual lowering of the water plane throughout the United States, as shown by the increasing depth of wells, and the greater difficulty of securing an adequate supply.

In connection with the more important work above enumerated, he was at all times prominent in scientific societies, and showed a broad interest and sympathetic appreciation of all advances in human knowledge. There are few scientific men of today who have had a wider range and broader grasp of what was formerly called "Natural History," and who could discuss these subjects with the breadth and

intimate knowledge of details shown by McGee. His publications are voluminous, and show a grasp of the larger features and relations of many of the highly specialized sciences.

The ability to accomplish such unusual results in a lifetime by no means long, has been due to an extraordinary diligence and power of application. Possessing a strong physique and untiring interest, McGee was able to concentrate upon each subject which came before him, and regardless of time or external distractions, continued hour after hour, sometimes all day and far into the night, on the subject in hand. Generosity marked all his acts and was one of his best recognized characteristics. At all times he freely shared with his associates the idea developed by him, discussing frankly all related facts and theories. Few men have done more to stimulate and diffuse general information, and to give freely to all who would receive his ideas and original conceptions. He was fearless in advocating the truth as he saw it, and in showing the fallacies of mistaken ideas, however popular they might be. He thus had a wide circle of very warm friends, who now miss his cheerful companionship and sincerely mourn his loss.

His character may be summed up in his attitude toward his approaching end. Interested at all times in matters of health, he discovered through observation that he had a fatal disease long before definitely assured of the fact by physicians. At once, he took a keen impersonal scientific interest in its progress, made accurate estimates of the probable length of life, the amount of work he could accomplish, made his plans systematically, and finished the work a few days before he was finally compelled to abandon original investigation. As long as consciousness remained, he took a lively interest in the doings of his friends, was at all times cheerful, preserving to the last his characteristic sense of kindly humor, and seemed more solicitous for the comforts and convenience of his associates than for himself.

From Doctor J. F. Kemp, of Columbia University:

When we find a man who works out his own preparation by the vastly more difficult method of personal effort, and who fits himself thoroughly and well in his early years, under his own instructorship,

we pay him a three-fold tribute of respect, and we view his results with the admiration which his arduous efforts richly deserve. In the latter group, on the roll of American scholars and scientific men, belongs the name of W J McGee, whose work and character we recall with affection and respect.

At the outset of his career, the aid which W J McGee received from others was extremely meagre. The common schools gave him his sole early training. But he was gifted by nature with an all-embracing and acquisitive mind, so that he absorbed methods and facts with eager facility. And yet, when we consider the effort that he of necessity put forth in order to learn the results of others; in order to acquire an easy, clear and correct literary expression; and to impress men in authoritative positions, so as to win an opening for future work, we gain some adequate conception of the difficulties which he surmounted.

W J McGee did all this and more. As he advanced in opportunity, he gained a broader and broader grasp of scientific problems, until this comprehensive sweep of the field of action became one of his chief characteristics. No one can read his principal monographs without being impressed by his clearness and breadth of vision.

On entering the United States Geological Survey in 1883, Doctor McGee came before long under the influence of Major Powell, and by the Major's strong interest in the physiographic side of geology he was apparently much influenced. His early observations upon the drift in his native State prepared him for this result. We all recall especially his later studies on the surface geology of Iowa, as the ripe fruition of years of growth under the Survey's influence. Before his final paper on Iowa in 1891, he had become busied with similar problems along the Atlantic Coast. While their treatment involved close stratigraphic work in the latest Tertiary and Pleistocene beds, yet as we read we see that our author's mind was constantly reconstructing the old physiographic conditions. The real objective of his work was the history of the Atlantic coast rather than the thickness and distribution of the beds which resulted from its ups and downs.

Major Powell, as we all know, was also profoundly interested in the ethnology of our aborigines. His life in the West had established the Indians very deeply in his affections. No one so closely associated

with him as was Doctor McGee could escape the contagion of these absorbing interests. The connection of man on this continent with the deposits of the glacial epoch led by a natural transition also to the study of the native tribes. We find therefore Doctor McGee passing in the early nineties quite naturally to ethnographical work, with which he was to be identified for the next fifteen years. His courageous and successful expedition to the Island of Tiburon was an example of the irrepressible spirit of the investigator, pushing ever into new and unknown fields. The tragedy of his life came when, from influences beyond his control, he was diverted from his natural and normal career. We remember at this date only the cheerful philosophy with which new, undeserved, and unexpected conditions were faced. We recall also the calm courage with which, in the solitude of the western desert, a physical break-down was overcome. We are mindful of the vigor with which new duties were assumed and discharged when our old friend resumed his place in the eastern world. We remember no less the characteristic cheery philosophy with which the final departure from this life was viewed, and the ever present desire of the man of science to make his experience of use to his fellows.

There have been many remarkable characters developed in America amid unpromising environments in youth. There have been many who have had in addition to contend with difficulties and disappointments in maturer years. There are fewer who have triumphed over all without bitterness, and with all the finer sides of character uninjured. Yet all this was done by him whose memory the Washington Academy of Sciences honors.

From Professor Charles Keyes, of Des Moines, Iowa:

In a short unpretentious paper, published so long ago as 1882, Doctor McGee clearly shows that certain thick sections of glacial till are divided medially by an extensive deposit of homogeneous pebbleless loam. The descriptive record is included in the notes "On the Loess and Associated Deposits of Des Moines." So far as it now appears this is the first and best evidence adducted up to that time in support of the theory of the complexity of the Great Ice age.

The discovery was followed by many others of similar nature until the complete sequence involved no less than five distinct till-sheets. Today the Iowa classification of the Glacial period is accepted the world over.

Since diversity of the Glacial period is a necessary consequence of Croll's now celebrated hypothesis of climate and time, this first serious attempt to establish glacial complexity as opposed to glacial unity premised by Agassiz, was soon shown to have its astronomical dates too far apart satisfactorily to explain the vicissitudes of the Ice age that were even then known. In the meanwhile direct observations in the field were beginning to tell heavily against the unity idea then generally held by scientific men. Professor Edward Orton had noted (1870) a soil separating the Ohio drift into two parts. Already Professor T. C. Chamberlin had argued for the duality of the Glacial period (1876). It remained, however, for Doctor McGee actually to demonstrate for the first time an orderly succession of glacial deposits in a definitely circumscribed area.

The arguments for a dual Glacial period, and at the time of its suggestion for a multiple Ice age, were for many years based mainly upon the fact of the presence in some till-sections of thin black soil streaks, replaced here and there by old peat-beds. The latter were plausibly accounted for in other ways. That there might be extensive interglacial sands, or clay-deposits, was not thought of. Yet they were actually described and a complete record made of their attendant relationships a full decade before the phenomena were properly interpreted.

At the time when Doctor McGee's little memoir appeared the subject of the complexity of the Glacial period was too new for a ready and correct apprehension of the facts which were accumulating with such amazing rapidity. The interest of glacial workers was centered too intensely upon the possible dual character of the Great Ice invasion to permit of the entertainment of any further complications. In Iowa, where afterwards the five great till-sheets were made out and shown to be separated from one another by extensive soil zones, thick deposits of loess, and vast accumulations of sands and gravels, Doctor McGee (then) had but recently gone over the ground, and had found everywhere the same succession of only two tills parted by fine

loam. This fact he attributed to the dual character of the ice advance. That he should have failed to detect the disparities in the correlation of the several till-sheets is not to be wondered at, for no detailed mapping of any part of the region had yet been done. It is, then, no disparagement to his keen observational powers, his philosophic insight into the order of nature, or his remarkable generalizing faculties, to note this fact, for he chanced to be on the ground a full decade too soon. Had he remained a few years longer in his native State he doubtless would have been able to correctly correlate his different drift-sections; but he was called into distant fields, and he was unable until many years later to review his earlier work.

The place where these depositional proofs of the complexity of the Glacial period were first obtained is for several reasons of exceptional interest. The section as originally displayed and described is now fast disappearing. It is also this section which later gave the first intimation of the eolic origin of American loess loams. It was here that was found the first clue to the wonderful interlocking of the southwestern loess deposit with the northeastern glacial tills. The locality bids fair long to remain one of the classic geologic spots of the continent.

At this time and distance there are few of us who have any adequate conception of the great difficulties which the Ice problem once presented. Still fewer of us there are who understand from experience what it really means actively and determinedly to contend on the battle-line of the unknowable. No one is in better position to know intimately the intricacies of attempting to decipher the glacial puzzles of that day than was McGee himself; and no one has stated them more graphically. Here are his own words, as he sums up his results in northeastern Iowa:

> The most startling induction of geology, if not of modern science, is the glacial theory; but in the problem of these pages it is necessary to do more than assume the existence and action of a great sheet of ice hundreds or thousands of feet in thickness and hundreds or thousands of miles in extent. In order to explain the sum of the phenomena it is necessary to picture the great ice-sheet not only in its general form and extent, but in its local features, its thickness, its direction and rate of movement over each square league, the inclination of its surface both at top and bottom, and

the relation of these slopes to the subjacent surface of earth and rock; and all this without a single glacial stria or an inch of ice-polish, save in one small spot, in the whole tract of 16,500 square miles. It is necessary to conceive not only the mode of melting of the ice at each league of its retreat, but also every considerable brook, every river, and every lake or pond formed by the melting, both at its under surface and on its upper surface; it is necessary to restore not only the margin of the mer de glace under each minute of latitude it occupied, but, as well, the canyons by which it was cleft, the floe-bearing lakes and mud-charged marshes with which it was fringed, each island of ice, and each ice-bound lake formed within its limits. And it is not only necessary to reconstruct the geography of a dozen episodes, as does the anatomist the skeleton from a few bones, but to develop a geography such as civilized eye has never seen, and which could only exist under conditions such as utterly transcend the experience of civilized man. All this has been done. The trail of the ice monster has been traced, his magnitude measured, his form and even his features figured forth, and all from the slime of his body alone, where even his characteristic tracks fail.

This now somewhat famous geologic section is situated on the crest of Capitol Hill, at the south end of the Capitol grounds, in Des Moines, Iowa. As originally described in the *American Journal of Science* (Vol. xxiv, p. 202, 1882,) the exposure of deposits presents the following relations:

5.	Till, light reddish buff clay with pebbles.....(feet)	7
4.	Till, contorted and interstratified with loess.....	5
3.	Loess, with numerous fossils.....	15
2.	Till, dark red clay with abundant pebbles	6
1.	Shale (Carboniferous) exposed	10

Three important features are especially to be noted: (1) The lower till (No. 2) represents what is now called the Kansas drift, which was formed when the great continental glacier, reaching southward to St. Louis and Kansas City, attained its greatest extent and thickness; (2) the loess members composed of fine loams (Nos. 3 and 4) constituted the soil formation during a long interglacial epoch when the climate was not very different from what it is at the present day; and (3) the upper till (No. 5) represents what is now known as the Wisconsin drift.

Thus for one of the half dozen great geologic generalizations of the Nineteenth Century Doctor McGee laid the foundations.

From Doctor F. H. Knowlton, of the U. S. National Museum:

(Reprinted from *Science*, Sept. 12, 1912.)

In these days of advanced specialization and refinement in the study of scientific problems, it has seemingly become increasingly evident that the best measure of success can only be attained with the full panoply of a modern educational equipment. Yet there have been in the past, and doubtless there will be in the future, notable exceptions to this rule. It is often said of one who has reached an eminence without the stimulating aid of early educational advantage, that had he fortunately possessed this training no one may measure the higher eminences to which he might have ascended. Rather is it possible—indeed, probable—that the spark of genius is stimulated by adversity, and that breadth of vision and strength of character come oftener as the fruit of action rather than of ease; for

So doth luxury make weaklings of us all.

Certain it is that Doctor McGee attained a very notable measure of success with the minimum of formal educational training.

William John McGee—or simply W J McGee, as in later years he preferred to be known—was born on a farm at Farley, Dubuque County, Iowa, April 17, 1853, and died at Washington, D. C., September 4, 1912. He was the fourth of a family of eight children born to James and Martha Ann (Anderson) McGee, and is survived by three brothers and a sister, the others having died in infancy or youth. His parents were of sturdy Scotch-Irish stock, his great-great-grandfather on the paternal side having been Alexander McGee of County Down, Ireland, who came early to this country, and on the maternal side the line leads back to Samuel Anderson, who was born at sea, about 1740, of Irish emigrant parents. The latter resided near Yorktown, Virginia, and both participated in the Revolution on the American side, which perhaps accounts in a way for McGee's intense Americanism. In infancy and early youth, although always of large size for his years, McGee was in frail health and somewhat uncertain

in disposition, and even in later life, notwithstanding his rugged physical appearance, he was far from being as strong as seemed apparent.

McGee's early education followed the usual course in sparsely settled country districts. He attended irregularly the county district school until he was about 14 years of age, but as the school was confessedly of low grade, it is not probable that he advanced much beyond the merest rudiments. From this time on his education was almost entirely the result of intense individual effort. In this, as is so often the case, he was urged and stimulated by the mother, an excellently well informed woman, who was particularly anxious that her family should be well educated. The last one apparently to give him formal instruction (1867–1868) was an older brother, who speaks of him as an exceedingly apt pupil, acquiring knowledge easily and retaining it in what was later developed into a really marvelous memory. His home studies were continued over the years 1867–1874, during which time he studied Latin, German (in which he became especially proficient), and the higher mathematics, including astronomy and surveying. He also read law and to some extent engaged in justice-court practice, but this never was considered as of much importance in his plan of life, and was soon laid aside. He was, however, an excellent surveyor, having been instructed in this field by a maternal uncle, and his work was much in demand in the neighborhood.

When about twenty years old McGee learned blacksmithing, and for several years engaged in the manufacture and sale of agricultural implements. In conjunction with an older brother and a cousin, he invented and patented (June 9, 1874,) an improved adjustable cultivator, but the enterprise was not financially successful, nor was the invention a pioneer in its class.

It was apparently about this time (1874) that McGee's attention was first directed to geology. Just what the incident was that first claimed his attention and stimulated his interest in what was later to be one of the dominating activities of his life is not known. The glacial mantle which so completely covers northeastern Iowa offered many then unsolved problems, and together with his brothers he explored with keen interest the numerous caves about their home and studied the peculiar rocky topography with more than boyish interest. He read widely of such books and papers as were then available on

glaciation and its phenomena, and began independent observations which soon brought him into communication and contact with other workers in this field. The fact that he joined the American Association for the Advancement of Science in 1878 (twenty-seventh meeting, St. Louis, August, 1878), enrolling himself in the section of geology, shows that his interest was even then crystallizing along these lines. So far as learned, his first scientific paper, "On the relative position of the forest bed and associated formations in northeastern Iowa," was published in 1878, and was the forerunner of many of like import. Between the years 1877 and 1881 he prosecuted, as a private enterprise, a topographic and geologic survey of some 12,000 square miles of territory in northeastern Iowa, though the full results were not published until 1891.

McGee's first work under Federal auspices was a report on the building stones of Iowa, prepared for the Tenth Census of 1880, though not published until four years later. This, but more especially his careful work on the multifarious phenomena of glaciation in the upper Mississippi Valley, had attracted wide attention, and in July, 1883, he was called to the U. S. Geological Survey, then under the directorship of Major J. W. Powell. In a very short time he was placed in charge of the division of Atlantic Coastal Plain geology. Although then but thirty years of age, he came, not as a mere tyro or dabbler in geology, as might be presumed from his previous isolation, but with an astonishing breadth of view and maturity of judgment, and within the next ten years he erected a foundation which must always be considered by any who would study the geology of the Coastal Plain. This decade—1883–1894—covers the period of his most intensive constructive geological activities. He resigned from the Geological Survey on June 30, 1893, to assume on the following day the position of ethnologist in the Bureau of American Ethnology, to which department he had accompanied Major Powell. One year later he became ethnologist in charge of the Bureau, and continued in this position until July 31, 1903, when he resigned to assume charge of the Department of Anthropology of the St. Louis Exposition, where he brought together an unprecedented assemblage of the world's peoples. At the close of the exposition he became the first director of the St. Louis Public Museum, continuing in this po-

sition from 1905 to 1907. On March 14, 1907, President Roosevelt created an Inland Waterways Commission, and at the first meeting of this Commission Doctor McGee was elected vice-chairman and secretary, a position he continued to fill until his death. About the same time (March 23, 1907) he was appointed as an expert in soil waters in the Bureau of Soils, United States Department of Agriculture, and in this position he also continued until his death.

Aside from the honors and responsibilities which came with a busy official life, many additional honors were conferred upon Doctor McGee. He was one of the principal founders of the Columbia Historical Society; sometime president of the American Anthropological Association, the Anthropological Society of Washington, the National Geographic Society, and the American Association for the Advancement of Science (1897). He was the senior speaker in the department of anthropology at the World's Congress of Arts and Sciences in 1904, and non-resident lecturer on anthropology at the State University of Iowa. In 1901, in recognition of his distinguished attainments, the degree of LL.D. was conferred on him by Cornell College, Iowa, at which time he presented a comprehensive essay on the "Beginnings of mathematics."

In 1888 Doctor McGee was married to Anita Newcomb, who, with a son and daughter, survives him.

In the field of the Pleistocene geology of the upper Mississippi Valley, McGee was really a pioneer. At the time he began his studies very little was known of the glacial history of this region, and he did much to establish a knowledge of the succession of invasions and recessions of the ice-sheet, and while many of his conclusions have been subject to revision in the light of fuller modern investigation, much of his work remains, and must remain, as a basis on which subsequent knowledge is to be builded.

McGee's most notable contributions to American geology, are, of course, in the Atlantic Coastal Plain. In this field there must ever be associated the names of four notable students—Hilgard, Smith, Dall, and McGee. These men have laid the foundation, however much it has been, or in future will be, modified, upon which all subsequent work must be erected. In the particular phase of the subject which McGee made his own, he was again a pioneer. He saw and appreci-

ated the broad problems of stratigraphic continuity and succession, of continental elevation and depression, and he set about their solution. His work was distinctly constructive, and as such finds a permanent place in American geologic history. While certain of his conclusions, as is almost inevitable in pioneer work, have been modified or revised, the broad fundamental generalizations remain as an essential basis for later students.

After an interval of a dozen years or more following the close of his studies on Coastal Plain geology, during which his attention was mainly occupied in the field of ethnology, Doctor McGee again returned to the consideration of certain collateral geologic problems. It had come to be the fancy in certain quarters that the removal of the forest or vegetal covering had little or no influence on the run-off of surface waters. His report on "Soil Erosion," published as a bulletin of the Bureau of Soils in the United States Department of Agriculture, is a complete and graphic refutation—if such were really needed —of this contention. His last work, completed less than a month before his death, and also published as a bulletin of the Bureau of Soils, is an elaborate study of subsoil water and its essential relation to agriculture.

Of his anthropological and ethnological work only the briefest mention may be made here. While much of his time was given to administrative work, he nevertheless found opportunity for a number of studies, perhaps the most notable being a study of the Seri Indians, a fierce previously unstudied tribe inhabiting certain islands off the coast of Lower California.

Doctor McGee did much for the Geological Society of America. He was one of its founders and served for four years as its editor, establishing the Bulletin, its official publication, on the high plane it then and has since maintained. His constant attendance at the meetings during the earlier years of the Society's existence will be recalled, as well as his contributions to many notable discussions of geologic problems.

W J McGee was a man of commanding presence, one who would attract attention in whatever assemblage he might find himself. Although seemingly somewhat formal in address to those not intimately acquainted with him, he was, nevertheless, a man of cordial sympa-

thetic manner and of deep human sympathies. It is related of him that once, when in attendance on a meeting of the American Association, he was asked by a local divine to fill his pulpit at the Sunday evening service. Although not affiliated with any church, McGee accepted at once, and, selecting as his text the words "Love ye one another," delivered an address replete with human sympathy and understanding. He was kindly and considerate to those who worked with him, and generous to a degree, it being rare indeed—too rarely for his own best interest—that an appeal was without substantial reward. He was a good conversationalist and a ready public speaker, having at command a splendid memory and a really wonderful vocabulary; in fact, in the use of the latter he sometimes seemed to border on the pedantic, yet when a new or unfamiliar word was used it was usually found in last analysis that it was a fitting word for the shade of meaning desired to be conveyed.

McGee was a helpful man, every ready with counsel and information to assist whomsoever might come to him. To the younger men he was especially considerate and helpful, drawing freely upon his vast storehouse of information without thought or regard for personal credit. When the so-called conservation movement was launched a few years ago, the exigencies of public life made it impossible for full credit to be given to all who had a guiding hand in the work, but from one in position to know it appears that the success of this movement was in a large measure due to the far-sighted comprehensive policy and sterling advice of Doctor McGee. Many of the activities of the Inland Waterways Commission, of which, as already mentioned, he was the Vice-Chairman and Secretary, were due to his energy and initiative. Laborious statistical tables were compiled, and scattered information brought together in usable form. During all these later years, although not engaged in active geological investigation, he was always willing and anxious to discuss the newer results in the several fields and to accept without question or resentment those which offered a surer solution than any he had himself proposed.

Although it is said of Doctor McGee that in early life he was distinctly averse to manual labor, in later life he certainly developed untiring energy, as a glance at his many and varied accomplishments will show. He was also a good organizer and was systematic and pains-

taking in all he undertook. His last work on "Wells and Subsoil Water," the proof-sheets of which lie before me, was recalled during the last weeks of his illness, and was finally submitted but two weeks before his death, complete to the last detail.

It is perhaps fitting in this connection that a word should be said of the remarkable courage and fortitude exhibited by Doctor McGee during the progress and culmination of the insidious malady (cancer) which caused his death. For the benefit of humanity he made a special study of his own case, setting down calmly and imperturbably the progress of the disease from its first observed inception, in 1894, to its obvious dominance, in April, 1912, this diagnosis being published a few days after his death (*Science*, September 13, 1912). It thus appears that for the last fifteen years of his life his work—some of it the most exacting of his career—was carried on in the impending shadow of certain dissolution, much of it at the last under the stress of acute physical suffering, but there was no slighting, no faltering, no repining.

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From Prof. Alfred C. Lane, of Tufts College:

I remember very well one of the times when I came in contact with Doctor McGee, when I happened to prepare, as he said, the first paper for the Geological Society of America which contained mathematics. He was quite anxious that the paper should be a model for others and took a great deal of pains in his editorial work to see that it was such.

Between editor and contributors of scientific publications there is ample opportunity for friction and I well remember the courteous care with which he made his various suggestions.

Doctor McGee was one of a type of men whom there seems to be a tendency to crowd out now, but to whom geology owes a very great debt,—men who without conventional academic training have brought to their work the innate ability and the keen interest which surmounts the obstacles that are thought to come from an early training in other directions.

I am very glad that there is to be a meeting in commemoration of Doctor McGee to call to the attention of geologists the duty which they owe to the class of men represented by him, as well as by Sorby and Walcott, and I am sure, too, that such a meeting, inspired by his example, would impress upon us the importance of the duties we owe, as men of science, not merely to science, but to the commonwealths of which we are members.

From Miss Emma R. McGee, of Farley, Iowa:

In a quaint old farmhouse, in the lovely State of Iowa, near the City of Dubuque, in the county of the same name, there is a library containing many old volumes, some of which came over the Atlantic Ocean over seventy years ago. Among others is the Good Book, sacred not only on account of it being that of Holy Writ, but of its Family Record in the autographs of the departed, whose forms and faces are seen only in dreamland. The fourth birthdate of the eight children born to James and Martha Ann Anderson McGee is this one: "William John McGee, born April 17, 1853, at Farley, Iowa." The writer has not yet acquired heart courage to make the record which should be in this old book, viz: "Died at Washington, D. C., September 4, 1912." He was never christened, as mother was a Baptist and the tenets of her church did not allow infant baptism. For some reason the appellation "Don" was given him when a small child, and he was ever afterwards "Don" to his family, schoolmates, and friends. Don was a very sickly, delicate child. Mother often related how she carried him in her arms almost night and day the first years of his life. The attending physician told her he had a Daniel Webster

head. Who this physician was, or of his ability, we can not say; but there is one thing certain, mother never made up that story. It might have been in this case as in some others, mother love saved the child when the skill of the ablest physician only played a minor part.

After he was about three years of age, his health and strength began to improve, although he still had a physical defect that was afterward outgrown. Possibly Doctor McGee inherited from his ancestry a little of their ruggedness which helped him to overcome the extreme weakness of childhood. His parents were of sturdy Scotch-Irish stock, his great-great-grandfather on the parental side having been Alexander McGee, of County Down, Ireland, who came early to this country, and on the maternal side the line leads back to Samuel Anderson who was born at sea about 1740, of Irish emigrant parents. The latter resided at Yorktown, Virginia, and both participated in the Revolution on the American side. Grandma Anderson's maiden name was Haggard, whose ancestry is traced back many generations to a Welsh family of Haggards living in Wales. They are distinguished for their longevity. A first cousin of mother's, Nancy Haggard Smith, living at Springfield, Minnesota, celebrated her ninety-sixth birthday last April. She reads much without spectacles and feels proud of the fact that she is related to H. Rider Haggard, the novelist of England.

It has been said, "There is a divinity that shapes our ends." It has often occurred to us in fancy that the beautiful place where brother and I were born might have had a trifle of influence in shaping his future career and attainment of eminence. Mother was born within two miles of the great Mammoth Cave of Kentucky and had a discerning eye toward the beautiful and sublime in nature. When a building spot was sought on the land father had entered from the Government, mother selected a site with so beautiful a landscape view that it might have driven to ecstasies either poet or artist. It was on an open prairie spot with a semi-circle of woodland a few rods to the front of where the house was to be located. There was a fine spring and large pond near it, which added to the charm of the place. Directly in front of our house was the semi-circle of high forest trees edged with smaller trees and shrubs that bloomed, and when the sun arose in his glory and splendor seemingly from behind the great

trees, the scene was certainly a perfect one. This was in the early days of Iowa when forest primeval and all else showed the work of the Infinite Hand that makes no mistakes. The Divine Artist is the best one.

To gaze on a scene of transcendent splendor, which baffles the power of human tongue to describe, especially early in life, is soul inspiring, and might have wielded a subtle influence over the life of our brother to aspire and achieve.

It is useless to reiterate anything about the scientific work accomlished by Doctor McGee during his life all too short. It has been told and retold in scientific journals. It was asserted in the long ago, "A prophet is not without honor save in his own country." The following item appeared in his home paper (*The Telegraph Herald*, published at Dubuque, Iowa) soon after his demise, which is a refutation of the old figure of speech:

> Let it be written imperishably in the records of Dubuque County that one of the greatest geologists, anthropologists, and hydrologists this Nation has produced was born in Dubuque County.
>
> Doctor W J McGee, whose death occurred in Washington last week, was born near Farley, of poor parents. He created his own educational opportunities, and he wrote his name among the men first in the knowledge of sciences wholly by his own unaided efforts.

There are brain records which time can never efface. This is one of them.

When my brother left home to enter his duties on the United States Geological Survey, it was with a heavy heart that we bade him goodbye, for there was a premonition at the time, which was afterward realized, that he was gone never to return as a link in the chain of the family circle. No more could we go to him for counsel, or to obtain information on any subject, as was our wont. He frequently came home afterward for a short visit, and it was our habit to go part way with him when he departed. If the weather was inclement mother objected to our going out; but father said to mother: "Let her go," so we went. Life has never been quite the same to his only sister since Don has been taken from it. Probably a little sooner will she cross the Mystic River than had he tarried longer. In closing, we will

repeat a little parody on the lines of Scott, which expresses our sentiments:

Brother rest, thy life work o'er,
Sleep the sleep that knows not breaking;
Dream of troubled times no more,
Morn of toil nor night of waking.

From W. C. Mendenhall, of Washington, D. C.

Doctor W J McGee had mastered and advocated the fundamental principles of Conservation long before the majority of those now most active in the movement had come to appreciate the real meaning of the word. He was one of the founders of this movement, was at all times one of the most stimulating thinkers in its councils, and in him Mr. Pinchot found one of his most loyal supporters and friends. Doctor McGee was the personification of strength and steadfastness in the pioneer period of Conservation, when the meaning of the word was unknown to the multitude, and when the mere suggestion that our natural resources are not inexhaustible, but may be depleted to the vanishing point by wasteful use, was regarded as a wild heresy. During the sessions of the National Conservation Congress he was its accepted authority on problems involving that most widespread and universally distributed of our natural resources—water. He has dealt with this resource from the points of view of transportation, of irrigation, and of power, and from the standpoint of biology, in which it is recognized as fundamental in all life.

Doctor McGee's mind was of the type of the intellectual pioneer, intensely individual and original. He was masterful in the alignment of facts and stimulating in the recognition and boldness of his expression of the generalizations and far-reaching conclusions to which his marshalled facts pointed. Like most men of brilliant imagination, he was at times impatient of the slow processes of research, or let us say rather that his impatience was with that timidity in reaching conclusions so often displayed by those engaged in research, rather than with the process itself. He believed that the scientist's practical rule of life should be the acceptance, as a basis of action, of the

conclusions indicated by such facts as are known, even though those conclusions may not at present be definitely established.

Doctor McGee's death at the Cosmos Club on September 4, 1912, removed from the domain of science and from the forum of public discussion one of its leading personalities. His career embraced an unusually wide range of activities, and in each of these he attained distinction. As a geologist he was one of the group assembled by Major Powell during the formative period of the United States Geological Survey, a group which made American geology classic and its leaders world-leaders in their science. In this field McGee's name is associated with the names of Powell, Dutton, Gilbert, Holmes, Emmons, and Hague. Later, with the establishment of the Bureau of Ethnology, into which he followed Major Powell, he became a pioneer in ethnological research, although retaining continually his interest in geologic and geographic problems. At the time of his death and for a few years prior thereto, he was the erosion and hydrologic expert of the Department of Agriculture, his immediate connections with that department being through the Bureau of Soils. His last years are distinguished by a number of papers on the subject of Conservation, in which he was so vitally interested; these articles are broad in their scope, thoroughly original and stimulating in their expression, and point out fearlessly some dangers of present practice and suggest methods of remedy. But a few days before his death he completed the correction of the galley proofs of the last of his papers, faithful to his work and to his duty even while descending into the Valley of the Shadow.

This very brief sketch would not be complete without expressed recognition of the fact that Doctor McGee's attitude in the face of death was in accordance with the best traditions of the science to which his life had been devoted and was as admirable and as deeply stirring and stimulating as any act of his career. For a year or more he had recognized the fact that he was afflicted with cancer and that his days were numbered. He faced this fact calmly and prepared patiently for the inevitable by carefully completing all work on hand and by disposing by will of his body and his brain to his friend and fellow scientist, Doctor Spitzka, to be used in the way most likely to be beneficial to humanity. So long as his faculties remained un-

dimmed, he maintained the same keen interest in scientific questions and current affairs that had marked his career at its height. Those of his friends who visited him during the last few weeks of his life heard not a single complaint nor an expression of regret, but found themselves chatting easily with an old and honored friend who gave no indication of the fact that he knew definitely that his career was soon to be stayed by the hand of Death. Thus, rising superior to the weakened pain-racked body, he met with philosophic calm and sublime courage the final inevitable test. It is not given to man to do more than this.

From Doctor George P. Merrill, of the United States National Museum:

Though I can not claim to have been intimate with Doctor McGee, my acquaintance covered practically the entire period of his connection with the government bureaus. Our relations were always friendly, if not confidential. I remember him as uniformly courteous, always ready and willing to give consideration to any worthy question brought forward, open to suggestions, frank in criticism. He had an unusual capacity for adapting himself to a wide range of work and conditions. This is illustrated to some extent by his published bibliography, but which gives little clue to his capacity for organization and his abilities as an editor, both of which found ample scope during the early years of the Geological Society of America.

He had also a remarkable faculty for absorbing and utilizing information on subjects not directly connected with his own special line of work. To illustrate this I need only call attention to his article on "Fifty Years of American Science," published in the Atlantic Monthly for September, 1898, or his Vice-Presidential address before Section H of the American Association for the Advancement of Science, for the year previous.

Were I to advance a criticism it would be to the effect that his plans were often detailed and comprehensive beyond a possibility of accomplishment. This trait was brought forcibly to my attention in connection with a fragmentary manuscript relating to a history of American state geological and natural history surveys to which I

fell heir. So far-reaching and detailed was the general scope as outlined in his synopsis, it would have been impossible of execution even had the original leaders in the various organizations remained to participate. In short, the plan seems to have fallen through from its own weight. But such a failing was perhaps a necessary consequence of an almost super-abundance of ideas, and it was by no means without its compensating features.

Were I to attempt a summation of his chief characteristics as they impressed themselves upon me, and this in the few words that I feel can be allotted me here, I would say that for wide interest in scientific matters, fecundity of ideas and mental vigor, he was by all odds one of the most remarkable men with whom it has been my lot to associate.

From Senator Francis G. Newlands of Nevada:

I greatly regretted that I was not able to speak at the Memorial meeting, and to pay my tribute to the character and memory of our dear friend, Doctor McGee. I had always had a great admiration for his scholarship, knowledge, and attainments, but I never got a real insight of his nature and character until we served together with him on the Waterways Commission appointed by President Roosevelt.

Our long journey over the waterways of the country was illuminated by his vast information, resourcefulness, imagination, humor, and practical judgment. Self-effacement is not an uncommon quality in those who delight to serve the public, but I have never known such self-effacement as that of our friend McGee. The question of personal credit or repute never seemed to enter his mind. A sense of service was his controlling impulse, and that without any thought whatever of selfish reward either in fame or emolument.

I saw him several times during his last illness. The sense of its incurability would have depressed the mental activity of others, but it did not seem to affect the operation of his great humane and kindly mind. His self-obliteration was as apparent in illness as it was in health.

I have missed his aid and coöperation in the great work that we have been engaged in, that of the conservation of our waters for every useful purpose and the mitigation of their destructive effects,

thus turning our floods from a menace into a blessing. No greater domestic question is before the country today for its consideration, and it is a great misfortune that we have not the advantage of his energetic coöperation and of his strong and lovable qualities.

From Governor E. F. Noel, of Mississippi:

During my term of four years as Governor of Mississippi, 1908–12, and to some extent before and afterwards, I participated in a number of gatherings in which the investigation, development, and conservation of our national resources were among the leading themes. On many of these occasions, Doctor McGee was present as an honored, useful, and exceedingly efficient member. When absent, his industrious researches and reports constituted one of the valuable and frequently utilized resources for data and argument.

In 1910, upon invitation of the legislature and Governor of Mississippi, Doctor McGee delivered in the Legislative Hall of our State a very able and interesting address as to the character and utilization of our State's natural resources, doubtless the strongest and clearest discussion of that subject ever made. His treatment, masterly and practical, proved his thorough knowledge of all of its phases, and his ability to picture it in an instructive and convincing manner. There and everywhere his services ranked him high among our Nation's patriotic and effective workers, entitling him to lasting and grateful remembrance.

In behalf of Mississippi and of Mississippians, we gladly join in acknowledgment of his high worth and of our being his appreciative debtor.

From Mr. M. W. Patterson, Secretary to Doctor McGee:

Having been intimately associated with Doctor McGee in the capacity of private secretary during the last five years of his life, I was afforded an opportunity to observe certain personal characteristics, evidenced in his habits and methods in every-day life and work, a reference to which may not be without interest. Doctor McGee was a hard, persistent worker, and while the work was trying and difficult at times, I look back to my experience with him with no little satis-

faction. The period during which I was associated with him was made pleasant by the kindness and the charming personality of the man, profitable by the training received under his elevating educational influence, inspiring by the magnitude of his interests, and distinctively interesting throughout by the diversity and originality of his work.

On intimate acquaintance Doctor McGee could only be regarded as a big-hearted, clean, liberal-minded gentleman. His very appearance reflected an inherent dignity; his deliberate determined manner, together with his honesty of purpose, inspired respect. Yet beneath the apparent sternness and austerity of the man there was a certain simplicity, a genuine sincerity, an unfailing courtesy, which aroused the admiration and love of a host of friends. I was always impressed by his uniformly amiable disposition. Throughout my connection with him he never addressed a cross or unkind work to me; in the place of criticism or complaint, entirely justifiable at times perhaps, there was only such encouragement and constructive suggestion for those assisting him as to inspire diligent and conscientious effort. Doctor McGee was a man of almost austere personal habits, yet always ready to find excuse for the faults of others.

In his work his methods were distinctive. Referred to as eccentric by some, these very eccentricities were merely indicative of that originality which is one of the characteristics of constructive genius. Although his ideas were remarkably broad and comprehensive, he gave particular attention to the smallest details. A chaotic arrangement of materials—the mass of literature and correspondence which he insisted on keeping on his desk—presented an appearance of confusion. Yet the orderly prosecution of his work was in itself an evidence of a well developed, well balanced, and, above all, a systematic mentality. Every subject apparently was carefully studied and digested and stored in an orderly arrangement in his brain, and this probably explains his wonderful memory, even for details. He met each task as it came, and concentrating his efforts on the particular matter at hand continued his work uninterruptedly, often disregarding the passage of hours or days, until it was brought to a satisfactory conclusion.

His writings were dictated, always without references before him,

and after revision of the first rough draft the second transcript usually represented the finished product, a third or fourth copy seldom being necessary. Yet his writings were noteworthy for their sustained elevation of tone and purpose no less than for their form, their completeness and conciseness, made possible by an unparalleled vocabulary. His dictation was extremely slow and careful. In preparing articles for publication he often dictated continuously for several hours, alternately pacing the floor and sitting at his desk, frequently continuing the day's work at the office for a few hours in the evening at his club; yet the transcription of the matter dictated might require only a few minutes. He indicated paragraphing and punctuation, and after his final reading of the manuscript nothing remained for the editor but to indicate to the printer that it was to be followed literally. In his correspondence, even the shortest letters, this same care was observed. His every letter reflected formality and courtesy. It was his unfailing habit in making reference, whether complimentary or otherwise, to third persons to send duplicates of the letter written to all parties interested.

His courteous manner and his generous disposition were, I think, the most striking of his personal characteristics. Doctor McGee was absolutely devoted to the public service, and it was in this connection that his generosity was most impressive. At all times willing to make any sacrifice for any cause designed to subserve the public interest, he was absolutely indifferent to personal gain, desiring only the opportunity to pursue with a free hand the work in which he was most interested. While he received a fairly substantial salary, he used only about a third of his income for personal expenses, the remainder being set aside for the use or benefit of others under conditions which to most men would have carried no sense of obligation. His work was not directed toward personal advancement. With a supreme confidence in his own carefully formulated ideas, his greatest function in life seemed to be in the education and inspiration of other workers to train their efforts toward effectuating the broad and far-sighted plans he outlined—in blazing new trails, opening new fields of research, and pointing out the enormous possibilities involved in following these new lines of endeavor—and in all adding materially to organized knowledge.

The breadth and comprehensiveness of his convictions are best illustrated by the policies of waterway improvement which he advocated—and very largely initiated; his ability to grasp and to make clear problems of far-reaching complexity is shown by his manner of dealing with complicated conservation questions; and these were the two great things with which Doctor McGee was most deeply concerned. Work which he had outlined for himself was often neglected in order that he might take time to help another. Whenever asked for criticisms or suggestions, they were always given freely and frankly, without any evidence of jealousy of the results of his own efforts, and were always either constructive in their nature, or merely offered in the form of commendation. It was in this phase of his work that the remarkably wide field his interests covered was indicated; he seemed interested in practically every branch of science. The material published over his own name represents but a part of his work. A great number of contributions were made by him in the form of interviews with other writers or material prepared for the use of co-workers, so that for an enormous amount of work the Doctor himself never received personal credit. He never hesitated to depart from beaten paths, consequently he was not without enemies, who, however, in most cases seemed by directing criticism toward a mode of approach or a single step in a far-reaching plan merely to emphasize their own limitations.

Physically Doctor McGee was a big, strong, well-preserved man. His energy and endurance were remarkable; even during periods of temporary inactivity he reflected a dormant potentiality. Although apparently in excellent health, he had noted for twelve or fifteen years certain physical infirmities, the nature of which he never definitely understood until during the summer of 1910 he submitted to an operation. At this time the true nature of his trouble was discovered. After this operation his health failed steadily, and in June, 1912, he suffered a fall, which, to use his own expression, put him on his back and gave the great trouble its innings. It was seen then that it was only a matter of weeks when the end would come; and it was during this last sad chapter of his life that his true character was most clearly shown. Confined to the room at his club which he made his home, attended by a few friends only, and neglected by those who by all the laws of nature should have been nearest him, the courage and cheer-

fulness of the man throughout were truly remarkable None realized more clearly than he the hopelessness of his case, or knew better when the end might be expected. It was a painful experience to be called on to assist in the systematic closing of his affairs. He carefully directed from his bed the completion of the work he had under way at the time of his accident, resigned his active positions in various organizations, and advised friends and colleagues of the anticipated end. He dictated his will, which is convincing evidence of his abhorrence of waste, his absolute devotion to science and the public interest, and of his thoughtfulness of others.

Owing to his wonderful vitality he lingered longer than the attending physicians anticipated, passing away quietly and peacefully during a period of unconsciousness in the early morning of September 4, 1912.

Much has been said by Doctor McGee's associates to indicate the loss to science, to progress, and to humanity his death entails, and it is a privilege to add this testimony that his greatness as a scientist was enhanced by his admirable personal characteristics.

From Doctor R. A. F. Penrose, Jr., of Philadelphia:

My first recollection of Doctor McGee was when he went to Arkansas in 1891 or 1892 to study the tertiary deposits of the southern part of that State. I was at that time assistant geologist on the Arkansas Geological Survey under Dr. J. C. Branner, who was State geologist. I met Dr. McGee in Little Rock and accompanied him for a few days on his trip through the southwestern part of the State. His wonderful energy and his quick grasp of the salient features of the geology of the region in which he was traveling left a lasting impression on me. I was at that time working on the geology of the iron ores of the same region, and the kindly interest Dr. McGee took in my work, as well as his pertinent suggestions, were a great stimulus to me in these investigations.

This trip in Arkansas was the only time that I ever traveled with Doctor McGee, and I never had the good fortune to be associated with him in any of his other work, but I often met him afterward in Washington and at geological meetings. He was always the kind,

considerate man that I had met first in Arkansas, always taking an interest in the work of the younger geologists, and encouraging them by good advice and suggestions. It was in these later years that I learned to appreciate his remarkable versatility, which enabled him to apply his strong intellectual powers to widely separated scientific subjects, so that he was a welcome member at all discussions, and a much sought advisor in many an intricate question.

In the death of Doctor McGee, I feel that the world at large has lost an able scientist, and that those who knew him have, in addition, lost a sincere and sympathetic friend.

From Mrs. A. E. Ford-Reel, of the United States Forest Service:

When I promised to send something for the McGee memorial volume it seemed that the preparation of such a paper would be the simplest and easiest thing conceivable; but I find myself, after innumerable attempts, still utterly unable to crystallize and place on paper in cold, bare words the wealth of fragrant memories which abide with me. You see, Fourth Dimensional things won't go into Third Dimensional words. So I shall just write—somewhat freely and informally—some of the characteristic little things I recall; leaving to his nearer friends and to his colleagues all record of the Doctor's work, his attainments, and his place in the world of Science.

There is so much that ought to be said of him just as the man, the friendly, courteous, human self of the man; and to those of us who saw him constantly, day after day, every day, month after month and year after year, that rare and radiant memory must in the last analysis completely overshadow—or outshine—all other sides of a great and many-sided personality. When the Doctor first came to St. Louis, early in 1903, to take up for the Louisiana Purchase Exposition the stupendous task of organizing and vitalizing a Department of Anthropology, he wrought against seemingly hopeless odds. You know how brilliantly he succeeded in this work, bringing together the most extensive concourse of the world's peoples ever planned, but no one outside his office could know what herculean force it took, during the formative period, to carry out this tremendous undertaking. The marvel of the man was his persistent energy, his untiring patience, his

definite holding to purpose, his accomplishment of the impossible—in the face of hopeless inertia, supreme lack of interest, and utterly inadequate financial support. But he did it! And with it all, kept sweet—ever serenely kind, ever quietly and gently determined, ever the uniformly courteous, steadfastly righteous, victoriously efficient leader and chief.

We always called him "the Chief"—the name fitted him as no lesser title could. And how all the queer folk loved him, the gentle, sweet-natured, responsive Ainu; the chattering, pranksome Pygmies; the grave, stolid Tehuelche, and even the passive, undemonstrative Indians of every tribe. They all adored him, just as we did—for his was "the understanding heart." Never shall I forget the picture all these strange folks made as they straggled back across the fields to the Exposition grounds from some fiesta held at Delnar Race Track to which the Doctor had taken his flock one summer Sunday during the exposition period. Led by the Chief, with whom walked old Geronimo, they trailed along in the heart of the sunset over the hills,—Indians and Ainu, Pygmies and Patagonians, Japanese and Filipino,—red, black, yellow, and white, each in his own tongue and in his own way going over the afternoon's fun—surely the most startling and never-to-be-forgotten procession of primitive peoples in all America.

He was so kind to them, and to all of us. He was so just and considerate. He thought straight. He "never even knew the name of fear." He was of all men one who saw life clearly, and saw it whole. He never spared himself, never thought of self. Never, in all the years I served him, never once did I know him to think or say or do an inconsiderate, or an unjust, or an unkind thing. And yet no man could be so stern and so relentless toward the wrongdoer, if necessary. There was no excuse for any wrong, or any mistake. He demanded the best—and he got it, for he gave the best. He had the rare faculty of inspiring and holding devoted personal loyalty and unswerving allegiance. More than anyone I have ever known he exemplified the incomparable, indomitable courage of William Vaughan Moody's "Fire Bringer."

He didn't preach, he just lived all the things he expected from us. I shall never forget his saying, toward the close of one particularly turbulent Saturday, "Now remember—the Golden Text for tomor-

row, is 'Patience, and Tolerance, and Reticence.'" Seems to me that's a pretty fair "Golden Rule" in itself. It has stood by me many a time when the hasty word almost spoke itself.

No one was ever so royally generous of his time, of his unparalleled store of knowledge, of himself. Although never really well from the time I first knew him over ten years ago, he never spared himself even when suffering. He seemed able to inhibit the personal element, to eliminate the personal equation. In thought and theories he was fifty years ahead of his times, but when associated with great movements he never cared to have his own name featured, but with the modesty of the truly great soul he quietly pursued his upward way, inspiring and carrying onward with him all who came to him for counsel and courage.

In his writings he possessed the most remarkable felicity of expression, choosing unerringly the one right word. The strain of Irish blood showed in the vein of poetry—the vein of sadness, which are born at a birth with Irish humour and Irish wit. It was more than a liberal education to work for him and with him, for he was more than an unusually remarkable man; he was a rare wonder of a man, an all-round, every-sided marvel of a man.

His far-sighted, clear-headed grasp of things, his knowledge and force and high hopefulness, were—nay, are an inspiration to all who fathered the Conservation movement,—and to all whose lives he touched. Rugged, and simple, and strongly individual in his whole life, nothing so gloriously proclaims the rare quality and great white soul of the man as the manner of his leaving this life.

Whether or not he himself believed in "ultimate continuity" (as Sir Oliver Lodge has it) as essential to science, we—who so truly love and reverence the splendid memory of this invincible spirit, this triumphantly victorious soul—must needs know (with Sir Oliver) "that memory and affection are not limited to that association with matter by which alone they can manifest themselves here and now, and that personality persists beyond bodily death." And though we said "Artemidorus, farewell!" we can not credit that so valiant a soul could die, could pass to that last strange change, could perish from itself and cease to be. Surely his departure from our sight is but another step forward in the unceasing progress.

From Doctor Oswald Schreiner, of the United States Bureau of Soils:

I knew Doctor McGee only during the last few years of his life so rich in experience and attainments. Recognizing his great personal force and his devotion to lofty ideals, to broad conceptions of science, and to the men who like himself labored for these things, it became a matter of regret to me that I had not had the inspiration of his guidance earlier. His charming personality, his truly wonderful power of expressing himself, and his great ability to see the interrelationship of things, had the effect of inspiring me with a renewed energy to labor on the difficult problems we were discussing, although I could not always subscribe to the deductions made. Though interested to some degree in the controlled results of modern laboratory science, he concerned himself much more with the broad philosophies based on observations in nature's own laboratory. He was a profound student of the great out-of-doors; he was a close observer, and had a retentive memory for even the minutest details of observations made as far back as his boyhood days in Iowa, as I had occasion to discover when we were discussing the occurrence and origin of the black coal-like fragments of soil organic matter. His ideas on soils I found extremely suggestive and helpful, though in the cold light of experimental science they seemed sometimes to go beyond the demonstrated facts.

As the science of chemistry is by nature a laboratory study, he seemed less in sympathy with chemical philosophy than with those of other sciences. Atomistic concepts of matter seemed to appeal little to him. From such discussions he would wander to the broader conceptions of the structure of the universe, and thus give a cosmic interpretation to all concepts of matter. His cosmic concepts interested me, almost charmed me by their boldness, yet I must frankly confess that at times his philosophy was not very clear to me. To inanimate matter he appeared almost to attribute functions and even motives of action. Although admittedly an agnostic, yet he seemed at times on the very verge of pantheism.

Doctor McGee was a constant source of inspiration and he gave freely of his vast learning to all who came to him with earnestness

of purpose, proving himself always a sympathetic critic and counsellor. His great devotion to the public interest, which was evident in all his actions and showed itself in all his plans, needs no especial comment from me. In his duty to the public, he always served to the best of his ability. I deem it a great privilege to have been counted among his friends, and my good fortune to have been his colleague in related lines of scientific inquiry.

From Doctor Eugene A. Smith, State Geologist of Alabama:

Doctor McGee visited Alabama and was my guest many times when our Coastal Plain work was in progress. That was during the "eighties." I found his suggestions of the very greatest value, and was most thoroughly in sympathy with him in his contention that the lithologic and stratigraphic characters of our Coastal Plain formation were entitled to as much weight as the Paleontological, and that a geological map should show all these characters and subdivisions wherever they could be consistently followed out. In other words, a geological map should not necessarily, and in many cases not even desirably, be a paleontological map.

The Atlantic Coast equivalent of Hilgard's Orange Sand was named by McGee Appomatox, but since by the rulings of the United States Geological Survey the use of a descriptive name for a formation was forbidden, he agreed to leave to Doctor Hilgard, who had years before described this formation the selection of a name which would pass muster at headquarters. After a conference between Hilgard, LeConte, Loughridge, and himself at Berkeley, the name Lafayette was selected, the type locality being in Lafayette County, Mississippi, in the eastern part of which the most characteristic occurrences of the Red Sand, pebbles and other beds, are to be found overlying the Eocene everywhere, capping the hill tops, and unconformable to the Eocene in every case.

At the Lunch Club of the younger members of the United States Geological Survey McGee was the subject of a good deal of good-natured chaffing for having surrendered his name Appomattox, the favorite quotation being "We've met the enemy and we are their'n." Everybody will agree that Doctor Hilgard was entitled to considera-

tion in this matter, but how many would have had the unselfishness to do the right thing at the sacrifice of a little personal credit.

Another incident might be cited as showing a characteristic of the man. A few months before his death I invited him to join me at Oxford, Mississippi, for the purpose of going over together some of the exposures of the Lafayette in that county, since some doubt had been thrown upon the age of some of the occurrences. He wrote that he would be very glad to join me in this trip, the details of which we could arrange a little later. A few days after this I received another letter from him in which he said that in his first letter he had not perhaps been sufficiently frank with me, since he was suffering from some internal trouble which would certainly take him off in a very short time, but whether in a few weeks or a few months he could not say. I think he died within a month.

Regarding McGee's work on the Lafayette, while we may not all agree with him in his conclusions, and while he may have included in his monograph some things that were not Lafayette, yet I think all must agree that this treatise on the Lafayette in the Twelfth Annual Report of the Director of the United States Geological Survey will always remain one of the classics of our Coastal Plain geology.

From Professor J. W. Spencer, of Washington:

His mathematical paper relating to the Glacial Theory was that which first attracted my attention to Doctor McGee. His early pages on the "Forest Beds" and the geology of northeastern Iowa opened other fields to me, as my earlier studies had been in the region of the Great Lakes and the St. Lawrence River. I was then living in the west. Our friendship began at the time of a visit to Washington in 1883.

McGee's laborious investigations in Iowa contributed largely to the foundation of the present views of the Glacial history of the Mississippi Valley, and of America generally. However, his farthest-reaching researches were those of the Coastal Plain, extending all the way from New Jersey to Mexico, and covering an area of 300,000 square miles. The same features have since been observed by me for another thousand miles in Mexico, thus extending the work of McGee.

Outside of the earlier studies of Professors E. W. Hilgard and E. A. Smith, in the Gulf States, very little was known of these wide-spread mechanical deposits, in which much confusion was likely to arise. Many writers were speculating upon the Glacial phenomena of the north, while few were interested outside of their own limited fields, much less caring for the geology of the south, although Professor Dana had been interested in the subject.

McGee's work upon the coastal plain was not a revision with even variations, but a new chapter in geology as great as the area covered. This investigator did not fail to appreciate the rights of others, but consulted with them, and adopted the term "Lafayette," which had been used by Hilgard.

In Doctor McGee's studies of the soils, the same originality is found in an old but unexplored field. The last time I heard him speak was upon the subject of water being at lower levels in the soil than before its cultivation, so that the water-supply in soils would limit the density of population.

McGee's labors in these and other fields show that he had no superior among his contemporary geologists, and some of his achievements were monumental.

To me it was a source of regret that his geological researches were restricted by his diversion to anthropology, although this branch added to his versatility. Yet I never heard him express himself upon this point, as he seldom showed his feelings, being guarded in his speech.

In his ethics, he had regard for the rights of others. He had been an independent and also an official investigator, realizing the difficulties of both classes. He was tolerant of the theoretical views differing from his own. Seeing the necessity of promoting independent research, he attended the organization meeting of the Geological Society of America, which Society was founded for that purpose. I believe that he was the only representative of the United States Geological Survey present. It was under his editorship that the *Bulletin* assumed its admirable form. So also he avoided the introduction of useless controversies, as in a case where an adverse criticism was appended to a paper. The editor sent the whole proof to the author, who replied, having the facts and logic on his side. This led the critic to withdraw his remarks, as did the author his reply.

Another side of his character should not be overlooked, his gratitude and loyalty, which raises his character as high as his scientific attainments. I was informed of the following incident only after his death. The names will be omitted unless made known by my informant, who conveyed to Doctor McGee the offer of a very distinguished position. His reply was "Oh, how I should like to accept it. I should prefer it to any other in the country, but I can not take it, for the old man (Major Powell) needs me. Yet I should like to have it, but I can not leave the Major." By way of explanation it should be added that Major Powell's health was failing, and he would have been compelled to retire, if McGee had abandoned the sinking ship, although it meant his own future and life. Louis Agassiz was once asked what his greatest work had been, and replied that it had been the making of five observers, although four had become his enemies. McGee would not have been in that list.

Here may also be stated what is not generally known. It was McGee who suggested to Major Powell the name of the one whom he nominated as his successor in the Directorate of the United States Geological Survey, and who was thereupon appointed.

From Dr. J. J. Stevenson, of New York:

During a visit to the Survey building in Washington, about thirty years ago, it was suggested that I might be interested in the outcome of an attempt to piece together the recently published county maps of the Pennsylvania Geological Survey. That outcome was not comforting to me, as a former member of that organization, but I was greatly interested in the sturdy young man who had patched together the, as my guide termed it, "crazy quilt." This young man was W J McGee, who had just completed at his own expense a Pleistocene survey of northeastern Iowa. He had little to say and his conversation gave no hint of that fluency of speech and abundance of knowledge, which in later years were so painful to his opponents in discussion. What he did say was pithy, direct; he recognized the bearing of every question and gave the answer without waste of words.

During frequent visits to Washington in immediately succeeding years, I met McGee in such a way as to bring about a certain degree

of intimacy. It must be conceded that the interviews were not always as comforting as I had hoped, but confession must be made that they were always profitable. He seemed to have read almost everything within his reach. His memory was unusually retentive, and his power of assimilating knowledge was surprising. Some men have a great stock of information, but the items appear, for them, to have no inter-relations—they hang around the walls of their memory like hams in a meat-shop, all complete but wholly disconnected.

Not so with McGee. His knowledge was arranged, it was his own, and had received his impress. He made his debut as an authority on questions in geology at a meeting of the American Committee on the Geological Congress in 1888, which he attended as representing Major Powell. At that meeting, the reports of the several subcommittees were read, beginning with that on the oldest rocks. Each member present had come with a document which he regarded as typically good. McGee discussed most of the reports earnestly, courteously, and with such evident accurate knowledge as to be discomforting to some of the authors. One, who had suffered most severely, besought me to build a levee to close the crevasse and to save us from drowning. All were convinced that McGee would be a power to be reckoned with.

Somewhat later, after organization of the Geological Society, I was thrown for a time into somewhat closer relations, and saw the man from a different standpoint. He showed peculiar efficiency as an organizer; he knew not only what he wished to do or to have done by others, but also how it should be done. He was not satisfied with planning, he set himself to the accomplishment of the plan. One instance out of many suffices. He was dissatisfied with methods of publication prevailing in scientific societies. At an early meeting of our Society a committee was appointed on his motion to consider the matter. He prepared an elaborate report, accompanied by a printed example. The form was approved, and he was chosen Editor with authority to enforce the rules—and he enforced them. It is quite possible that at times he used less of *suaviter in modo* and more *fortiter in re* than was agreeable to authors, who felt that their importance deserved more of consideration; but he certainly succeeded in bringing about a reformation. Prior to his installation, authors too frequently

paid little attention to the form of their manuscript, and the burden of rendering it clear to the printer was left to the editor, who, in too many cases, was compelled also to rearrange the material. Not infrequently, the manuscript was in such shape as to add to the cost of composition. But McGee made sharp differentiation between the several duties of the society, the editor, and the author; and his system was adopted more or less closely by many other societies. After a service of two years, when the precedents had become firmly established, he retired from the work, with high reputation as a dictator to whom the geologists were greatly indebted.

McGee was, in complete sense of the term, a self-made man. It is very certain that he regarded his success in this work with some degree of complacency, which occasionally aroused not wholly good-natured criticism. He had acquired a vast stock of well-digested knowledge and had added greatly to the world's stock of new knowledge; comparing himself, in these respects, with many others who had enjoyed the advantages of scholastic training as well as those coming from early associations, he found no reason for shamefacedness. There is no doubt that the conditions led him to express himself in debate, at times, with undue positiveness and without full regard to his opponents. But no one of us need be in haste to cast stones at another. We are all too ready to forget that a generous Providence has endowed us with a liberal supply of defects and are too ready to denounce the faults which we see in others, but which, thank God, do not exist in us. Yet McGee never seemed to entertain ill-will against any on his own account; I never heard him speak disparagingly of other geologists, though he did not hesitate to discuss their work. He always seemed to feel that the world is large enough for all.

Reference has been made to McGee's memory and to his pride as a self-made man. He recognized that he was a strong man, and that he was not alone in that recognition. He was so strong that he saw no discredit in acknowledging indebtedness to those who had helped him up the ladder when he was struggling at the foot. He was not ashamed to be grateful and was ready to prove gratitude by self-denial. This characteristic was proved on one occasion, to which reference may be made here as both principals are dead. Prof. James Hall, who, for a period of two generations, was state geologist of

New York, had reached the age when his physical forces were yielding to the strain at Albany, where during his long career he had been amazingly successful in antagonizing state officials by defeating their efforts against him. He felt that it would be well for him and for the work if a younger man could be put in charge while he could still control the appointment of a successor. Several men were considered and at length he decided that, if McGee would take the place, he would retire at once.

Within a few days later, I had occasion to visit Washington and took advantage of the opportunity to lay the matter before McGee, then connected with the Bureau of Anthropology, of which Major Powell was the head. He was assured that the appointment was certain, if he desired it; he knew perfectly well the conditions and burdens of the position; they were such as appeal to an aggressive self-confident man. After the matter had been laid before him, he was asked for an answer. Tears were in his eyes and some had found their way to his cheek. "That is what I have wanted, what I have hoped for; but I can't go; the Major needs me." That was all; the answer was final. Major Powell had become unable to perform the duties of his office, and McGee was one of the few who knew it. He was doing double work, the Major's and his own, for the Major's sake, because years before Powell had recognized the young man's ability and had given the opportunity to prove his worth.

McGee's loyalty to his friends was intense, almost a weakness. He seemed little capable of fighting a battle for himself and appeared practically indifferent to attacks upon himself; but he resented with almost hatred what be believed to be injustice to one whom he knew to be his friend. In such cases he was betrayed into a harshness of language which startled those who knew him best. But, as I well know, the inherent manliness of the man led him to regret such outbursts, and to repent in sackcloth and ashes.

It would be impertinent for me to speak about the scientific worth of McGee's work, as for the most part it concerns portions of the geological column outside of my restricted area; but one thing is certain, he saw phenomena clearly and recorded his observations honestly, in such fashion that, if he had made errors in observation or conclusion, the reviser would find no difficulty in discovering them.

I have had occasion to study very closely several of his contributions, and respect for his method increased with the reading.

I would lay a double wreath upon his tomb; one to the friend whom I have lost, the other to the student who has left an abiding impression upon several branches of American science.

From Professor J. E. Todd, of the University of Kansas.

My thought goes back to a day in 1878, when I first met Doctor McGee at a St. Louis meeting of the American Association. We each of us presented our first papers before the Geological Section. We were both from Iowa. He had a retiring, almost bashful, manner, and I took pleasure in introducing him to several acquaintances whom I had met while studying in the east a few years before.

In 1881, while spending a winter at Washington, I received a letter from him asking me to make some inquiries from Major Powell, then Director of the United States Geological Survey, concerning some formations in northeastern Iowa. During our interview, Major Powell volunteered the remark that he considered McGee a very promising young man. This I naturally repeated to McGee. I can not doubt that that remark had much to do with his going to Washington a few years after and with his brilliant career there, which distinguished him over all the world. I have met him several times at various scientific meetings, and have often been impressed with his native ability, his quiet confidence, his resourcefulness, and the uniform success which rewarded his efforts.

He made mistakes and made enemies; from many of these I have often thought a thorough education would have saved him. He deserved great credit for having achieved so much despite the disadvantages of his early life. Few have done so well. I have always found him a genial companion and a faithful friend.

From Doctor Thomas Wayland Vaughan, chief, section of Coastal Plain investigations, United States Geological Survey:

McGee's most important geologic contributions were those he made to the geology of the Atlantic and eastern Gulf Coastal Plain while connected with the United States Geological Survey, which he joined

in 1883. He was placed in charge of the Potomac Division of geology in 1885 and the scope of the territory over which he exercised supervision was gradually extended until in 1890 it comprised most of the Atlantic Coastal Plain and the part of the Gulf Coastal Plain east of Mississippi River. His study of geologic problems was commensurate with the limits of the region, and in his publications he devotes attention to it throughout its extent from Cape Cod to the Mexican border and from the Gulf of Mexico to southern Illinois.

McGee is one of a series of investigators in this region, and should be considered in relation to his predecessors, to his contemporaries, and to his successors. Among his predecessors were H. D. Rogers and Cook in New Jersey, Tyson in Maryland, W. B. Rogers in Virginia, Emmons and Kerr in North Carolina, Tuomey in South Carolina and Alabama, Hilgard in Mississippi, Safford in Tennessee, Loughridge in Kentucky, and Hilgard and Hopkins in Louisiana. Besides those mentioned, other geologists, prominent among whom were Lyell and Conrad, had made notable contribution to the geology of the Coastal Plain. Among his contemporaries were Salisbury in New Jersey; Fontaine, Ward, Darton, Kerr, and J. A. Holmes in the Middle Atlantic slope; Smith, Dall, L. C. Johnson, and Langdon, in the eastern Gulf Coastal Plain; Hill and Call in Arkansas; and Hill and Penrose in Texas. The contemporaneous investigations by members of the United States Geological Survey, from Maryland southward to the Mississippi River, except those by the paleontologists Fontaine, Ward, and Dall, were under his supervision. Excellent as was the work of many of these geologists, among whose names are those of men of great distinction, its scope was mostly areally limited, and the attempt had scarcely been made to correlate geologic phenomena throughout the vast extent of the entire region.

There was in all of McGee's work on the Coastal Plain a dominant motive to which a large part of his influence on succeeding investigations is to be attributed. This motive was to discover the genetic principles underlying the geologic phenomena to which he paid attention, and to base his classifications on homogeny.

He gave particular consideration to physiology, stratigraphy, and physical geologic history. In treating the physiography, besides describing the relief of the land surface, the drainage courses, and the

shore lines, he made an attempt to ascribe the various land forms and the peculiarities of drainage and shore line to the causes that had produced them. These lines of investigation led to a proposed genetic classification of physiographic features. The influence of Powell, Gilbert, and Chamberlin is acknowledged in this phase of his work. The genetic principle was also fundamental in his stratigraphic work. He was not satisfied with the mere description of stratigraphic units and physically tracing them as far as possible, but he also tried to reconstruct the conditions under which sedimentation took place, and to ascertain the source whence the sediments came. He was led to study the record of sedimentation with reference to the degradation of adjacent land masses and to consider the diastrophic movements whereby the limits of areas of sedimentation and degradation are reciprocally shifted. He developed the principle of homogeny as a basis for geologic correlation and applied it extensively. He endeavored to write geologic history in terms of diastrophism, sedimentation, and degradation, his aim being to reconstruct the physical history of the Coastal Plain.

McGee is largely known to geologists because of the attention he paid to those Coastal Plain formations in which marine fossils are not known. He proposed the name Potomac formation for the nonmarine Lower Cretaceous sediments of Virginia and Maryland; he gave the name "Appomattox" formation to certain gravels and loams unconformably overlying the Miocene, and unconformably overlain by geologically later deposits of Pleistocene age in Virginia; and he applied the name Columbia formation to extensive terrace deposits along rivers or facing the coast and to sands or loams on divides.

He attempted, in his consideration of the Potomac formation, which has subsequently been subdivided into four formations, to reconstruct the geologic history antecedent to its deposition and the physical conditions under which its deposition took place. According to him, the deposition of the "Appomattox" (for which the subsequently proposed name Lafayette of Hilgard was substituted in 1891) took place during a period of regional depression which lowered the land in amounts ranging from 100 to 1,000 feet below its present altitude. The depression, which was accompanied by crustal warp-

ing, was followed by uplift and subaerial erosion. The post-Lafayette uplift and erosion was succeeded by subsidence, which, although not so great in amount as the preceding Lafayette subsidence, was likewise accompanied by differential crustal movement. Three phases of the Columbia formation, the fluvial, interfluvial, and low-level, were recognized.

McGee's work on the Lafayette was preceded by Hilgard's on the "Orange Sand" of Mississippi, and the concept underlying the treatment by each author was to a considerable degree similar. Numerous observations previous to his own had also been made on both fluvial and coastal Pleistocene phenomena. Since McGee's publications on the "Appomattox" or Lafayette and the Columbia formations appeared, the late Tertiary and Pleistocene geology of the Coastal Plain had been studied in every coastal state from New York to the Mexican border and throughout the Mississippi Embayment. The investigations are still in progress and their end is not yet in sight. As might have been expected, many of McGee's conclusions have already been greatly changed and it is evident that still further modifications are necessary, but notwithstanding these changes in interpretation the value of his influence on the progress of these researches has been so great that to overestimate it would be difficult. By calling attention to the similarity of phenomena throughout the area of the Coastal Plain, by his attempt to treat these phenomena in a comprehensive and connected way, by his proposing a valuable working hypothesis, and by his attempts to correlate the fluvial and coastal terraces of the non-glaciated areas of the south with phenomena in the glaciated areas of the north, he has greatly contributed to the advancement of geologic research.

McGee's efforts were not confined to elucidating the geologic history revealed by those formations mentioned, for he endeavored to trace in the Coastal Plain all the different geologic formations or their stratigraphic equivalents throughout their extent, to interpret conditions of sedimentation, to ascertain the source of the sediments, and to correlate the record of sedimentation with that of the degradation of adjacent land masses. By aid of the information procured from these different lines of inquiry, he endeavored to reconstruct the geologic history of the Coastal Plain region from the end of the long

period of uplift preceding the subsidence initiating the Lower Cretaceous to Recent time. He recognized that the aim of historical geology is to present a consecutive coördinate account of the history of the earth, and that geologic progress demanded an attempt to present such an account. McGee made it, and he did well, especially well when the meagerness of information twenty years or more ago is borne in mind.

No estimate of McGee's contributions to Coastal Plain geology would be adequate without considering his personality. It was my good fortune to make his acquaintance shortly after I joined the staff of the United States Geological Survey in 1894; our relations soon became friendly and so continued until his death. As I was his successor in having under my direction the geologic studies in the territory over which he previously had supervision, it was natural that I should discuss with him problems of Coastal Plain geology. Two characteristics of McGee were impressive. One was an utter absence of personal bias in considering his own previous work. He neither belittled nor defended it. He once said to me "Each succeeding generation has its own problems," intimating that he had done his work and had left the continuance of the investigations to those who were following him. This was not due to apathy but to the clear recognition of the principles underlying scientific advance, for he was interested in the progress of the researches, and discussed problems in the most open-minded way. The other characteristic was his ever-ready helpfulness. An instance of both of the characteristics combined in one act may be given: In 1910, E. W. Berry found Wilcox Eocene fossil plants at Oxford, Mississippi, in material cited as typical of the "Orange Sand" by Hilgard, and considered typical Lafayette by McGee. As in the literature there was vagueness regarding the type locality of the formation, I reported the results of Berry's investigations to McGee, and requested a statement from him. A copy of his reply, written with the intention that it be published, may be found in the *Journal of Geology*, vol. 19, p. 251. The quality of this act is evident.

The geologic work on the Coastal Plain antecedent to McGee was detached and areally limited, although it had engaged the attention of a number of geologists of a high order of ability. He was the first

to treat the region as a unit and to present its geologic history consecutively from basal Cretaceous to Recent time. Although he was constructive to a high degree, the data he used were not adequate for a finished product. Subsequently, additional information has been acquired, and his interpretations have been greatly modified, but the goal of geologic investigation, as he recognized it, his own high ideal of research, and the example of his open-minded generous character remain unchanged, and persist to guide his followers in the field in which he labored so effectively.

From Doctor I. C. White, State Geologist of West Virginia:

The writer's personal acquaintance with Doctor W J McGee began when the latter was so intimately connected with the late Doctor J. W. Powell, Director of the United States Geological Survey. It was also his good fortune to be associated with Doctor McGee on an important committee of the Geological Society of America, appointed at the first regular meeting of that body in Ithaca, New York, December 27, 1888. To this Advisory Committee on Publications, consisting of Joseph LeConte, W J McGee, N. H. Winchell, I. C. White, and W. M. Davis, was referred the very important subject of mapping out plans and rules to govern the publications of the newly organized Society. The committee elected Dr. McGee Secretary, and he made such an exhaustive study of the publication methods of all other existing scientific societies, culling from them whatever features seemed desirable and adding new ones from his own fertile brain, that when the Committee met there was but little for the other members to do except to approve the work of its talented Secretary. The admirable publication plan reported by Doctor McGee at the Toronto meeting of the Society, August 28, 1889, was adopted almost verbatim by the Council, and the wisdom and forethought of its principal author is sufficiently attested by the 20 odd splendid volumes already issued which place the publications of the Geological Society of America fully abreast of those produced by any other similar organization in the world. It was during the several meetings of this Committee that the writer realized the wonderful breadth of comprehension and fullness of knowledge with which Doctor McGee's master mind was so

richly endowed. This many-sided culture and apparently boundless knowledge acquired through a life of toil, often for the daily necessities of existence, are all the more remarkable when it is considered that their possessor never enjoyed collegiate advantages and that he was really self educated.

The writer occupied a seat at Doctor McGee's table in the dining room of the Cosmos Club for two or three days only a few weeks before the fatal termination of the malady from which he was suffering, and there learned from him the nature of his illness. His clear and calm analysis of the incurable disease which was rapidly sapping his vitality; his cheerful frame of mind while he stood almost in the shadow of the last enemy; and his determination to fight off as long as possible the inevitable day which none knew better than he was near at hand, all conspired to add a new chaplet to the laurels of a deathless fame, won by his own untiring efforts during a vigorous and busy life.

From Doctor Harvey W. Wiley, of Washington:

My acquaintance with Doctor McGee was of long duration. I met him nearly thirty years ago, and during this long period my admiration and regard for him increased. His was a wholesome influence, manly and lasting. I knew Doctor McGee better as a man than a scientist. Our specialties were far apart, but our human sympathies close together. He was scientifically interested in man, dead and living. I was working more for man, present and to come. But our two fields covered all time.

Doctor McGee was wholly unselfish. A little incident shows his readiness to serve in any and all circumstances. We both attended the meeting of the Association for the Advancement of Science in Toronto several years ago. Lord and Lady Dufferin gave a reception to the Association in the Parliament House. Doctor McGee and I went together. After paying our respects to the Governor General and Lady Dufferin, we took our places at the side of the large audience room to watch the brilliant spectacle. After the reception a clergyman came up to us and said to me, "I beg your pardon, but I assume you are one of the visiting scientists, and I am anxious to

have you fill my pulpit on Sunday evening. The clergymen generally are making similar requests." At that time I had not had any experience in "filling pulpits" and so excused myself—"but" I said, "my friend here, Doctor McGee, can preach almost as well as any minister." Doctor McGee came to my rescue and accepted the invitation. I am certain no better sermon was preached in Toronto that Sunday night than his.

The poignant grief his early death brought to his scientific friends in Washington was not of a fleeting nature. We shall remember him with love, and think of him with regret, while memory lasts. I am glad to add this mite to the treasures of this memorial volume.

From Professor Henry S. Williams, of Cornell University:

It gives me pleasure to take a little part in commemorating the life of our friend McGee.

His genial, optimistic, energetic personality will be recalled by all who knew him in the early active days when he was right-hand man for Major Powell in Washington, and doing his own part in Geological Survey work.

I saw considerable of him on committees concerning the International Congress of Geologists, and in preparing for the Washington Congress—also in the early days of the Geological Society, and in the debates in meetings of the American Association whenever the age of relics of man in geological formations were at the front. He was a positive man, ready to speak on his side of the question, and always enthusiastic. My special field of geology gradually led me into groups in which he was less often present, and I rarely met him in the latter days except at the Cosmos Club in Washington.

I am sure he did much to advance the science of Geology which his writing will perpetuate, but my memory recalls more strongly the open, warm-hearted kindly friend we knew as McGee.

From Richard W. Young, of Salt Lake City, Utah:

My acquaintance with Doctor McGee extended over a period of six or seven years—a privilege that came to me through my connection with the National, now the International, Irrigation Congress. For

numbers of years past, Doctor McGee, by consensus of opinion, has been the most indispensable factor in the growth and usefulness of that influential organization. To his far-seeing and analytical mind were due, almost entirely, the reorganization of the Congress, through which its activities were extended throughout the interval between sessions, and through which its direction was conferred upon a small, representative, and effective Board of Governors; and to his practical and scientific insight was to be attributed the fact that the programs of the Congress came to be of great practical worth and benefit to the irrigator. At the request of his co-laborers, he read many papers and delivered many addresses before the Congress, all of the greatest practical and technical value. There was no man upon whom the Irrigation Congress leaned so heavily. No man has ever been identified with that organization, whose loss is proving or could prove to be so serious to its welfare.

We, of the Congress, loved Doctor McGee for his unfailing courtesy, appreciation, and solicitude,—our sorrow is not merely official, it is deeply personal.

On the occasion of his visit to Salt Lake City in February, 1912, he informed me of his serious illness and in reply to my expressed desire to see him at the session to be held in the following October, he informed me that he should not be present, adding that he had but six or seven months longer to live. I told him that I was shocked at his statement and that surely there must be some mistake. He replied that there could be no mistake; that he had consulted the most skillful surgeons and was but reflecting their experienced judgment. I last saw him in Washington in the summer, only a few weeks before his demise. He was, as ever, patient, solicitous of the welfare of the Congress, and keenly alive to the problems of the day.

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